

COMPONENTS



Our components and services file - as requested



With Compliments

AEG

Adelphi Way Ireland Industrial Estate Staveley Derbyshire S43 3LS Tel: 01246 473086 Fax: 01246 280082



WORK SPECIFICATION NUMBER

06 25 C12 15 6 1 49

FERRITE

TRANSFORMERS

LAMINATED

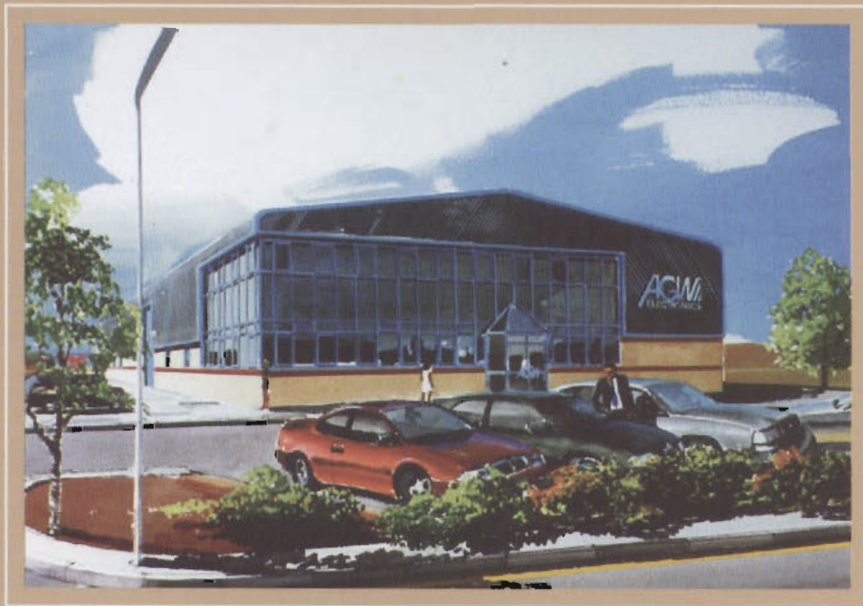
TOROIDAL WINDINGS

SPECIALIZ

PLANNING



# Service backed by quality and design expertise



The policy of AGW Electronics Ltd. is to provide a complete service, based on technical and commercial knowledge, production efficiency and quality assurance, in order to achieve total customer satisfaction.

Established in 1975, the company is now a market leader in the design and manufacture of wound components and electronic assemblies, supplying the power control, industrial drive, military, aerospace, telecommunications, automotive and leisure markets.

AGW's success is based upon our belief in the necessity to always meet our customer's requirements in terms of quality, reliability and service.

In the initial stages of any project, we use our wealth of experience to help our customers develop product specifications that combine a high degree of engineering integrity with the necessary commercial considerations.



Such an approach ensures that our customers achieve the best possible design for their products in the most cost-effective and suitable format.

This philosophy prevails throughout the organization, where the latest machinery and process techniques are utilized to ensure that our customers always receive their products on time, and always to the highest standard required. Customer satisfaction and confidence is further enhanced by AGW's commitment to quality.

We recognised early in our history the benefits of introducing and adhering to a strict quality control system. To this end the company gained BSI approval as early as 1987, later achieving BS EN ISO 9001:1994 accreditation before moving on to BS EN ISO 9001:2000.

We have UL approval for implementing thermal insulation systems on wound components to European and American standards (EN60950 and UL60950), further highlighting our commitment to a programme of continuous improvement.

## AGW ELECTRONICS LTD



# AGW ELECTRONICS LTD

## FERRITE TRANSFORMERS



### AGW ELECTRONICS LTD

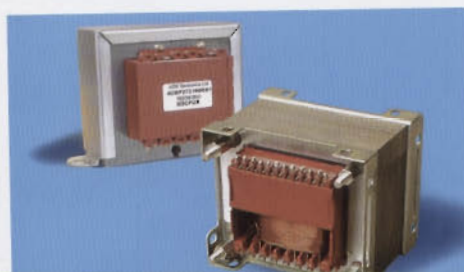
AGW Electronics Ltd. has over 25 years of experience manufacturing ferrite cored transformers. Working alongside customers and ferrite suppliers, the company collaborates in the design of power conversion and high-frequency products.

Recent developments in ferrite material specifications have enabled designers to produce more efficient transformers. AGW has developed copper foil winding techniques to exploit the full capacity of these materials. AGW produces line, power, pulse and drive transformers, used in many applications including switch mode power supplies, inverter and motor drive controllers.

These transformers can be manufactured in a variety of finishes and encapsulations, and from various core types, including E, ETD, EFD, RM, P and planar cores. Surface mount variants, and other core types for specialised applications are also available - see FACILITIES

## LAMINATED TRANSFORMERS

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### AGW ELECTRONICS LTD

Laminated transformers can be manufactured to customer requirements from standard and specialized parts.

Mains power transformers are produced in the range 1 VA to 3kVA single phase, and up to 25kVA 3 phase.

AGW also manufactures specialist transformers using nickel based or other alloy laminations. Typical applications include line matching, microphones, loudspeaker output, and military and aerospace equipment.

Depending on the application, PCB or chassis mounting options are available

## TOROIDAL WINDINGS



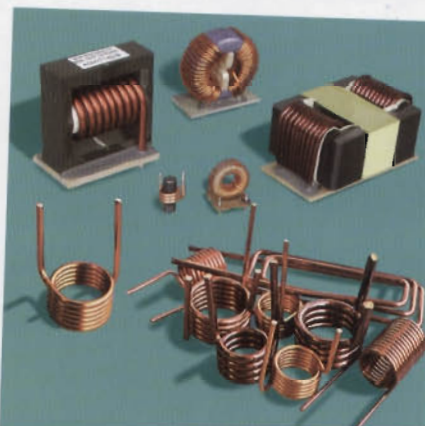
### AGW ELECTRONICS LTD

AGW Electronics Ltd. manufactures both toroidal transformers and inductors. Power transformers can be manufactured in the range of 1VA to 1kVA to suit customers' input, output and dimension requirements.

AGW can assist with the design and manufacture of suppression chokes, common mode chokes, SMPS inductors etc., from ferrite, iron powder or amorphous iron material, supplied by major core manufacturers.

AGW has extensive manufacturing capabilities available to meet most requirements, ranging from CNC toroidal winding machines to assisted pull winding, with finishing operations which include mounting, potting and vacuum impregnation.

## INDUCTORS & CHOKES



### AGW ELECTRONICS LTD

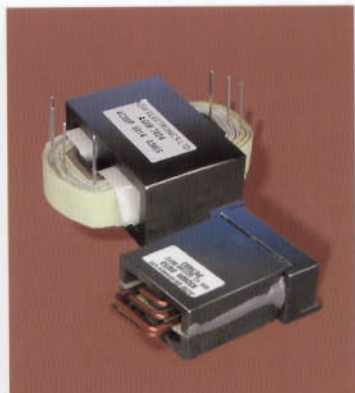
AGW Electronics Ltd. manufactures components used as common mode chokes, EMC suppression chokes, RF chokes, switch mode power supply inductors, smoothing chokes, saturable reactors and specialist inductors. Inductors and chokes can be manufactured in toroidal or E-core style using material and sizes available from major core manufacturers, including ferrite iron powder, amorphous iron and silicon iron laminations. AGW's extensive facilities for toroidal winding, and specialized equipment allow winding of heavy conductor material to cope with the high currents demanded by many modern applications. This powerful combination of manufacturing capability and design, testing and finishing, ensures a complete service to the customer.



# - Design and Manufacture

## PLANAR WINDINGS

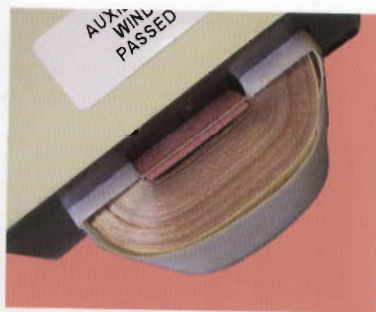
### AGW ELECTRONICS LTD



Planar windings have certain advantages over conventional winding systems. These advantages are mainly in size and efficiency, with a typical efficiency of 98% being achieved, while their low profile makes them especially suitable for high density equipment designs. Other benefits of planar construction are very low leakage inductance, and minimum Electro Magnetic Interference (EMI). AGW has developed enhanced ways to produce planar chokes and transformers. Using a system of sealing the copper plates inside a plastic envelope, insulation integrity is ensured. Another system using a winding technique similar to that used in conventional chokes and transformers, provides a cost-effective alternative. They are available in power ranges from a few Watts to several Kilowatts, and their terminations and mountings can be tailored to customer requirements.

## COPPER STRIP WINDING

### AGW ELECTRONICS LTD



Copper strip winding is one of AGW's key areas of expertise. Advances in ferrite material technology have led to higher frequency and higher current power supply transformers and chokes. The struggle to place enough copper into the winding window and alleviate the skin effect problem, means that winding with wide flat copper strip has become more prevalent.

AGW has vast experience in this field and has successfully overcome the problems associated with insulation, copper fill and connections. A range of machines has been specifically developed by AGW to fulfil the requirements of copper strip winding, giving maximum copper fill and allowing each bobbin size to use its full power range.

## SPECIALIZED WINDINGS

### AGW ELECTRONICS LTD



AGW Electronics Ltd has the capability to design and manufacture specialized windings, and has been carrying out this type of work for more than 20 years, to suit the special requirements of the telecommunications, leisure, entertainment, measurement, defence and power industries. A further aspect of this work is our ability to replicate obsolete items for use in the service sectors of these industries.

Typically we can manufacture wave windings, self-supporting coils, high voltage windings, antenna coils and IF transformers. Our experience in using specialized materials enables us to meet our customers' requirements, with a variety of finishes and encapsulations available - see FACILITIES.

## MANUFACTURE & DESIGN OF PCB and LIGHT ELECTRONIC ASSEMBLIES

### AGW ELECTRONICS LTD



Using modern methods and practices, supported by a suite of CAD software, AGW takes designs from original specification to finished product. We design circuits from simple passive displays through to Microcontroller based logic, with our in-house capability to generate code, and programme small to medium batches. Fast prototyping of PCBs and mechanical parts is readily achieved through EDI, using industry standard formats such as GERBER, DWG and DXF. We also have the resources to manufacture production aids for use in manufacture and testing.

AGW assembles using a variety of PCB styles - conventional, plated through, SMD and mixed technology.

Automated techniques such as flow(wave) soldering and infra-red reflow are used to maintain high standards.

We also support light electrical and mechanical assembly, giving us the capability of complete product manufacture.

To many of our customers we provide the complete solution



# ng Excellence

AGW Electronics has been manufacturing for over 25 years, during which time it has developed the ability to react swiftly to market changes and customer needs. Never has this ability been more necessary than in today's global markets, where developing and marketing products quickly and economically has become essential. Our skilled and experienced development and production engineers, backed by an expert logistics team, enables us to help customers to develop, prototype, and gain the required type approvals for their products, within today's ever diminishing timescales.

It is now a necessity for any product to have European and/or UL approval.

AGW is a UL approved coil winding manufacturer, and its insulation systems can save you time and money when you seek approval for your products to standards such as EN60950 and UL60950 (formerly UL1950).

Because wound components typically make up 30-50% of the cost of a finished product, AGW strives continuously to improve its engineering and manufacturing to maintain your competitive edge.

If production volumes increase to the extent that overseas sourcing is being considered, AGW can help you deal with the technicalities and logistics of this type of purchase by using our proven overseas manufacturing contacts. In the unlikely event of delivery problems occurring, AGW has the manufacturing ability to ensure continuity.

## FACILITIES

### AGW ELECTRONICS LTD



AGW Electronics Ltd. is housed in a purpose designed manufacturing facility. The company's equipment reflects its modern surroundings, and includes multi-spindle CNC winding machines, CNC toroidal winding machines, automatic soldering, specialist heavy copper winding machines and a flow soldering capability.

The company also has vacuum impregnation, vacuum forming and potting/encapsulation resources.

Automatic test equipment is used to confirm product conformance.

In addition to being able to test for all the recognised industry standards parameters, AGW can carry out partial discharge testing.

A team of sixteen people controls two floors, totalling 20 000 square feet of manufacturing area. The quality wound products, sub-assemblies, assemblies and complete equipment are produced to customer driven delivery schedules. A computerized production control system, utilising dedicated software, drives and monitors the production process.

The manufacturing facility is supported by an in-house toolroom and a design and development department. These areas offer technical and practical support, as well as being able to supply customers with a rapid sampling service.

## APPROVALS

### AGW ELECTRONICS LTD



AGW's quality management system is approved to BS EN ISO 9001:2000. This management system is designed to continually improve performance while addressing the needs of all interested parties. This approach enables AGW to analyse customer requirements, define the processes that will achieve a product that is acceptable to the customer, and control these processes, to provide products that consistently fulfil the customer's requirements.



AGW has held UL approval since 1998 - enabling our wound components to comply with thermal insulation systems, European (EN60950) and American (UL60950) standards Class B, Class F and Class H.

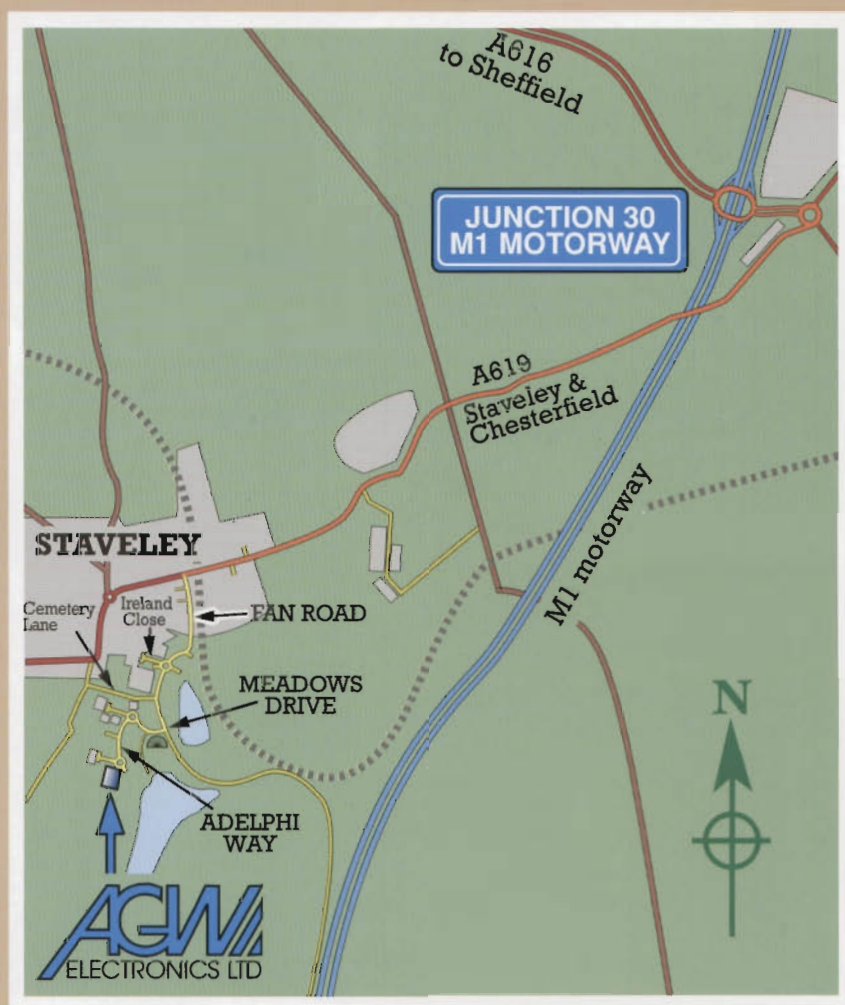
These testing procedures secure limits of thermal endurance for products that specify temperatures which are above the expected operating class rating.



# Finding us

AGW Electronics Ltd. is situated centrally in the UK, close to the Derbyshire/Yorkshire border. The modern purpose built factory is located on a new industrial estate, adjacent to a large country park and recreation area.

We are readily accessible by road via the M1 motorway (less than 3 miles), we are only 3 miles from the nearest direct rail link to London (Chesterfield), and we are well served by air from Sheffield, East Midlands International and Manchester Airports.



## AGW ELECTRONICS LTD

Tel: +44 (0)1246 473086

Fax: +44 (0)1246 280082

Adelphi Way  
Ireland Industrial Estate  
Staveley Derbyshire S43 3LS

[www.agw.co.uk](http://www.agw.co.uk)  
[sales@agw.co.uk](mailto:sales@agw.co.uk)