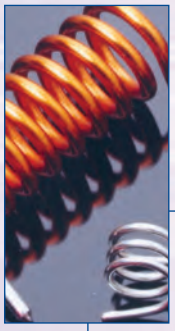
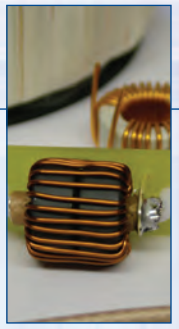
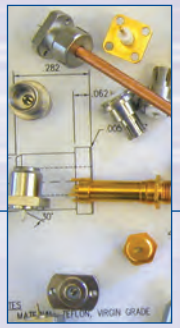
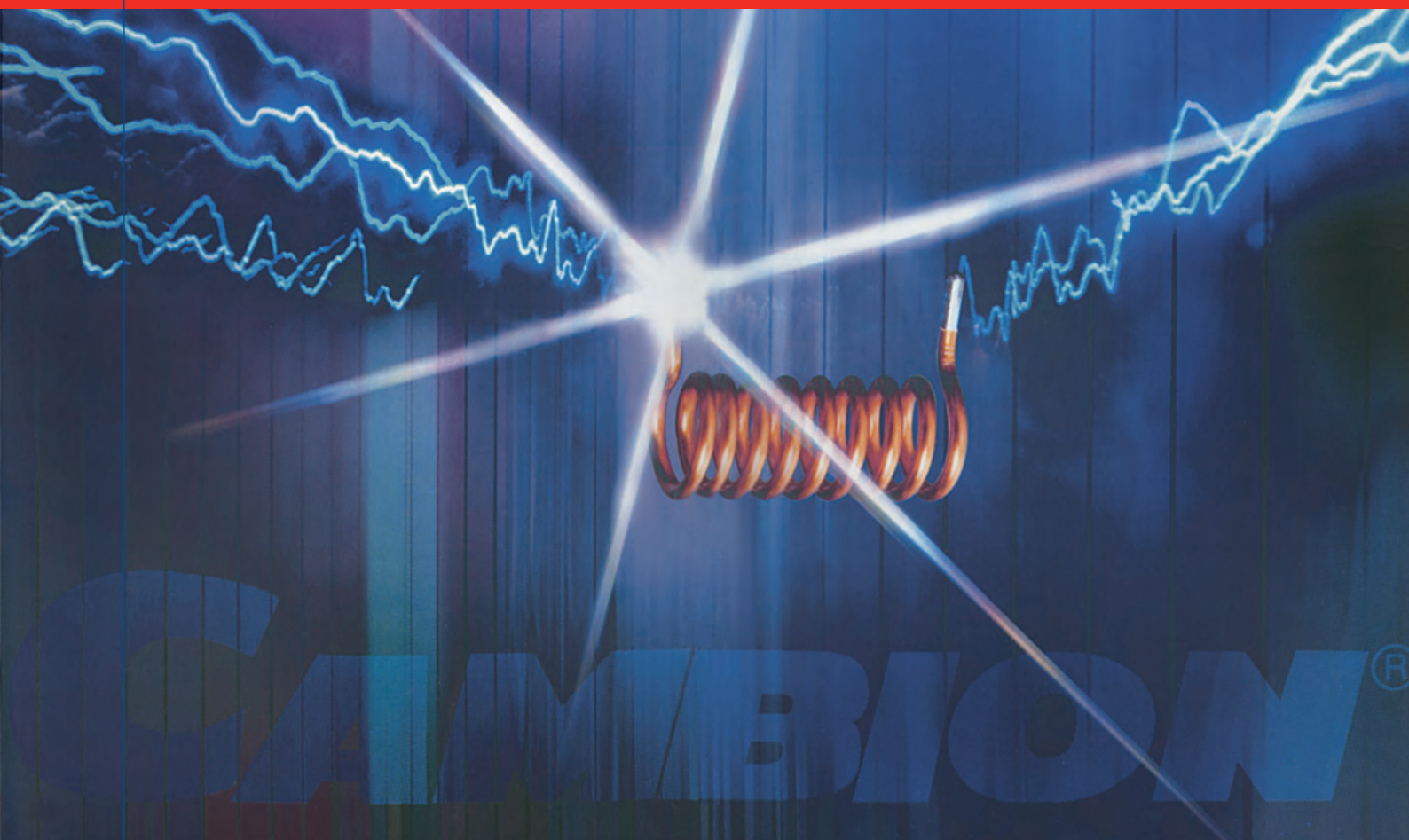
CAMBION®
A UE Company

short form catalogue







CAMBION®
A UE Company

about the company

Cambion® - The Story So Far

The *Camb*ridge Thermionic Corporat*ion* was founded in the 1930's in Cambridge, Massachusetts USA. The name Cambion® being derived from the first four and last three letters of that name.

The company quickly established a reputation in the USA as a quality supplier of small electro-mechanical and electronic components for the military and professional electronics markets.

In 1961 a parallel manufacturing facility was established in Castleton, Derbyshire, England to service an ever-expanding global market.

1961	Cambion Electronic Products Limited established in the UK
1981	Cambion, SAE and Hollingsworth acquired by Midland Ross (MR).
1984	Name changed to Midland Ross Limited (MR).
1987	Management buy-out of the MR connector division to form IPI.
1987	Name changed to Interconnection Products Limited. Cage Code U2600
1991	The US part of IPI ceased trading. Cage Code 71279
1991	Acquired by the Wearnes Organisation.
1994	Name changed to Wearnes Hollingsworth Limited. Cage Code U4251
2001	Name changed to Wearnes Cambion Limited. Cage Code K3105
2015	United Engineers Limited acquires the Wearnes corporation
2016	Name changed to Cambion Electronics Limited. Cage Code K3105

Over the company's history, ownership changes have given rise to various name iterations such as Midland Ross, IPI Limited, Hollingsworth and Wearnes.

In 2015, the Singaporean multi-national, United Engineers Limited acquired the organisation to support its growth in Technology and Manufacturing.

Cambion® Your Total Manufacturing Solution Partner

As the history shows Cambion® have a long and established pedigree for high performance electro-mechanical and inductive components serving the professional, automotive, military, aerospace and industrial markets. Cambion® are committed to ongoing product development, products are constantly reviewed and updated for strategic fit to meet the ever changing marketplace. Continual investment, especially in the latest machinery, has resulted in substantial manufacturing and assembly capabilities to cover a broad and comprehensive range of disciplines and technologies. The unbeatable combination of modern materials and processes carried out by highly skilled operatives ensure the highest possible quality standards are achieved.

Cambion® are autonomous in its manufacturing capabilities with stamping, machining, moulding, automatic assembly and a fully equipped toolroom all under one roof at its ISO9001 & ISO14001 Castleton facility. Consequently Cambion® has total control over factors of production, so are able to swiftly take ideas off the drawing board and make them a reality in double quick time.

Cambion® brings together extensive experience and knowledge to offer a full design and prototype service. Engineers are able to provide a solution to a customer's individual requirements where standard components may not be suitable.

Cambion® works closely with its associated group facilities in the Far East, supporting the Electronics market with an array of services and products, ranging from precision electronic components and assemblies, PCBA, Die Casting, to full turnkey box build devices, consequently offering access to low cost manufacturing.

Group facilities are dedicated to providing OEM, ODM and EMS services for industry. Products and services include: inductive components, electronic connectors and assemblies, miniature switches, anti-theft devices sensors, PCBA, full box build and many more. With a dedicated precision moulding and stamping capability along with R & D centre, giving the capability of supporting small to large projects. The Group also has a leading precision engineering provider specialising in aluminium die-casting, extrusion and CNC machining. In-house tool shop facility allows the fabrication production tooling and maintenance, thus streamlining production expenses and minimising customer response times. Active in all electronic markets, but particularly strong in the automotive sector. In addition to ISO9001, it is also registered with ISO14001, OHSAS18001, TS16969 and AS9100.

OUR VALUES

UPHOLDING INTEGRITY
Integrity guides our interactions with shareholders, customers, the community and stakeholders

CHAMPIONING INNOVATION
Innovation is key to our future growth and development

FOSTERING TEAMWORK
Teamwork enables us to achieve results based on a common identity, vision and purpose

ENSURING EXCELLENCE
Excellence eliminates mediocrity and constantly drives us to do better

electro mechanical

Cage Jack – PCB mounted single pole sockets

Highly reliable PCB connector with multiple contact points to 60% of the circumference of the mating pin. Used in conjunction with Connector Pins and Shorting Links. Also known as Jacks, Jack Sockets or PCB Sockets.

Mount – Solder, Press-fit, Swage, Crimp & Eyelet

Versions – Straight & Right Angled, Closed & Open ended, Insulated.

Acceptance Diameter – 0.41mm (0.016") to 2.54mm (0.100")

Current Carrying Capacity – up to 32 Amps.

Material
Spring Beryllium Copper
Body Copper or Brass, Deep Drawn or Machined

Plating Options
Gold - Tin - Tin/Gold
Right-angled versions can be supplied with colour code snap on insulator. Swaging tools available on request. Custom Designs available on request

Connector Pins, Polygon Pins and Wire Wrap Terminals

A range of precision machined Pins for through board
Connector pins are used in conjunction with Cage Jack or Shorting Link Socket.
Can be used when inserting into various PCB materials such as FR4 and Ceramic.
Wire Wrap Terminals are either stamped or polygon machined.

Mount – Solder, Press-fit, Swaged & Crimp

Versions – Straight & Right Angled. Standard, Slotted, Turreted, Eyelet & Patch Cord form.

Crimp AWG – 16 AWG – 28 AWG

Pin Diameter – 0.41mm (0.016") to 2.54mm (0.100")

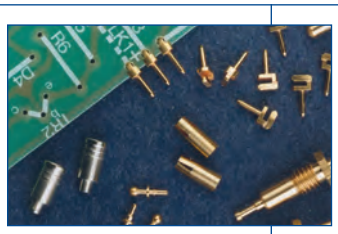
Wire Wrap Styles – 2 & 3 wrap lengths

Board Thickness
Pins 0.79mm (0.031") - 3.96mm (0.156")
Wire Wrap 1.59mm (0.062") - 4.76mm (0.187")

Material
Brass or High performance Tellurium Copper

Plating Options – Gold - Tin

Connector Pins also designed in Patch Cord style. Comprehensive range of insertion tools specific to the Terminal mount.



Spring Loaded Contacts and Connectors

A range of discreet, and assembled Spring Loaded Contact's offering low contact resistance, high reliability, and up to 1 million cycles.

Mount – Solder, SM, and press fit

Versions – Slotted, solder bucket, socket, and pin

Material
Body Brass
Plunger Brass
Spring Stainless Steel
Insulator High temperature plastic, UL 94V-0

Plating – Gold

Operating Temperature Range – -40°C to +125°C

Dual in-line connector available 4 through 20 way.

For custom design please consult factory.

Shorting Links - Also known as Handbags or Jumpers

Type – Male & Female

Styles – Insulated & Non Insulated

Pitch – 2.54mm (0.100") to 12.7mm (0.500")

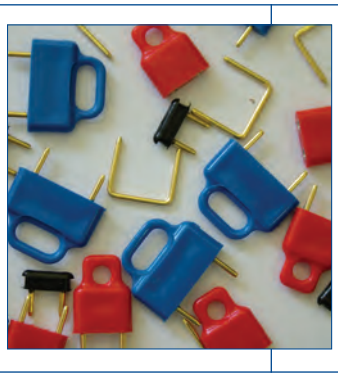
Colours
Red, Blue & Black as standard other colours available on request

Material
Link Brass
Insulator Polypropylene
Female Spring Beryllium Copper
Female Body Copper

Plating Options
Gold - Tin - Tin/Gold

Test Point

A 6.35mm (0.250") Shorting Test Point available in various colours to allow in-line testing without the removal of the existing component.



electro mechanical

Solder Terminals

A range of Terminals specific to the desired method of soldering.

Mount – Solder, Press-fit & Swaged

Versions – Slotted, Turreted & Threaded.

Board Thickness
0.79mm (0.031") – 3.18mm (0.125")

Material
Brass & Phosphor Bronze

Plating Options
Silver
Gold
ElectroTin
Electro Solder

Comprehensive range of insertion tools specific to the Terminal mount

Insulated Terminals

A range of Insulated Terminals in the stand off or feed-through style.

Versions – Slotted, Turreted & Threaded

Insulator Material
PTFE (Teflon)
Diallyl Phthalate
Ceramic
Tufnol

Terminal Material
Brass

Plating Options
Silver
Gold
ElectroTin
Electro Solder

Comprehensive range of insertion tools specific to the Terminal type.

Connectaball - PCB test points

A Quick and simple means of termination for PCB test points. Machined for high performance and reliability with eight points of contact on engagement. Unhindered movement of the assembly within a solid angle of 90˚about the axis of the test point, beyond which the assembly disengages automatically.

Mount – Surface Mount, Press-fit, Swaged & Edge Mount

Type – Ball & Socket Wire Assembly

Electrical – Working Current – 3 Amps Max.
Contact Resistance – 5mΩ

Mechanical – Engaging force – 60N
Pull off force – 4.9N

Material – Ball & Socket - Brass Socket Insulator – PTFE

Socket Wire – 19*0.2, silver-plated copper, Teflon insulated or 28*0.15, tinned copper, PVC insulated. Supplied in standard length of 457mm (18.00"), other length made to order.

Plating Options - Silver - Gold - Electro Tin

Colours – Red, Blue & Black as standard other colours available on request

Relay Bases

Available as 8 and 11 way, with, and without mounting ears, to suit Leach Relay types M300 and M500. Other versions available on request

Materials
Insulator – High temperature plastic, UL 94V-0, suitable for vapor phase, infrared and wave soldering

Contacts – Brass, Gold plated

Clips – Beryllium Copper, Gold plated

Operating Temperature Range
-40°C to +125°C

Current – upto 25A

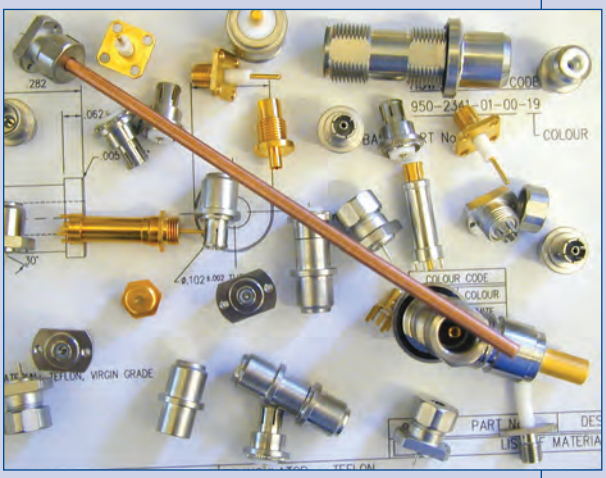
electro mechanical

RF Connectors

Recent major investment in 'state of art' CNC machining centres and contact less measurement systems, has allowed Cambion® to compliment its range of high performance connectors and inductive products, with RF Connectors. Specialising in manufacture of custom variants of industry standards.

Cambion® can offer a unique development facility of precision turning and prototyping of application specials in styles such N type, 7/16, SMA, SMB, SSMB, MCX, Din 41626 and many more, incorporating blind mates, quick termination with minimal outlay.

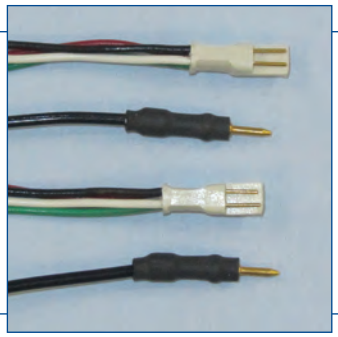
Also available are custom converters and adaptors theoretically between any standard range of RF Connectors. Contact our Technical Sales Desk on **+ 44 (0)1433 621555** or send enquiry via email to **sales@cambion.com**



Custom Connectors and Cable Assembly

Cambion® are able to assist with Electro-Mechanical component design, either hybrid versions of standard products, or to an application specific requirement, supported with fast turnaround of prototypes via its UK manufacturing facility.

Additionally, Cambion® can offer full project management of connector and cable harness developments.



Battery Holders / Adaptor Boards / Component Clips / Hardware

Battery Holders

A range of Battery Holders to accept a range of industry standard batteries.

Styles – AA, C, D & PP3

Mount – Screw & Through Board Solder

Material
Body & Clip – Polyester
Spring/Solder Lug - Phosphor Bronze

Plating (Spring/Lug) – Tin
Battery Clip Supplied loose with assembly

Socket Adaptor Boards

A range of socket adaptors which allow for swift conversion of stadard IC sockets to accept axial leaded components.

Number of Ways - 6, 8, 14, 16, 24, 40

Material
Pin - Phosphor Bronze
Board - FR4

Plating Options Gold – Tin

Custom designs available on request

Component Clips

Consist of a metal housing and a spring-loaded plunger which, when depressed opens to accept a component lead. Mainly used for testing and burn in components.

Mount – Thread (2-56 & 3-48), Swage, Press-fit, Pluggable

Version – Insulated & Non-Insulated, Capped Plunger.

Material Housing & Plunger - Brass.
Spring – Cres. Steel, Passivated

Insulator - PTFE (Teflon)

Plunger Cap - Nylon

Plating Options - Nickel - Electro Solder

Stand Offs & Spacers

A range of stand-offs and spacer in both round and hex forms.

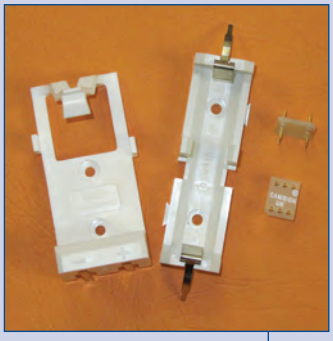
Lengths 4mm (0.157") to 25.4mm (1.000")

Versions – Through hole or Threaded.

Tapped Imperial 2-56 to 6-32 / Metric M2 to M4

Material Options Brass - Stainless Steel - Aluminium

Plating Options Nickel – Cadmium



Inductive products

Filtered Terminals

Capacitance – E12 range from 150pF to 2200pF
Capacitance Tolerance – ±20%, ±10% and ±5%

Working Voltage – over 500V DC

Woking current – upto 20 Amps

Plating – include gold, silver and tin

Mounting – Thread, solder and swaged

Additional elements such as inductors can be included within the package to form Pi filters

Air Coils

Types – with or without ferrite, Iron powder and steel cores

Diameter – 1mm to 40mm

Turns – up to 100

Wire size – 0.1mm to 5mm

Wire type – silver plated, tinned, enamel coated copper and aluminium

Applications include – power supplies, noise suppression, RF filters

Variable Coils

Inductance – 50nH to over 100mH

"Q" – greater than 200

Frequency range – from below 1KHz to over 500MHz

Styles – Open and magnetically shielded versions

Pattern size – 5, 7 and 10mm others to order

Mounting – through hole and surface mount

Applications Include – filters, if transformer, communications systems, telemetry

Chokes

Inductance – 22nH to over 100mH

Current – greater than 4A

DCR – less than 10mΩ

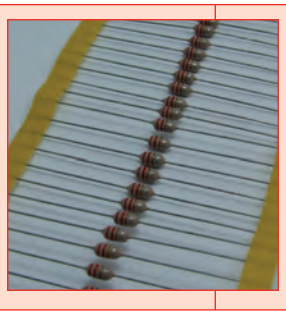
"Q" – greater than 100

Tolerance – 5% and 10% available others to special order

Case type – open, shrink sleeve, epoxy and moulded

Packaging – loose, ammo pack or tape and reel

Applications include – communications equipment, RFID, filter networks



Toroids

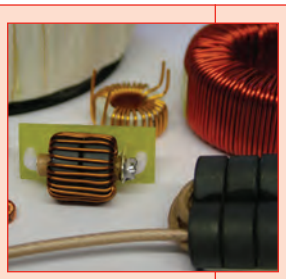
Outside Diameter – 1.5mm to 175mm

Core material – strip steel, amorphous, iron powder and ferrite

Wire size – 0.05mm to over 3mm

Mounting – self-leaded, surface mount, open frame, potted

Applications include – dc-dc converters, common mode and differential mode filter, RF mixer, baluns, current sensors, audio systems



Inductive products

Wire Wound Chip

Footprint – 0402, 0603, 0805, 1008 and 1812

Inductance – 1nH to 1mH

Current – up to 1.3A

Tolerance – 2%, 5%, 10% and 20%

Core materials – ceramic and ferrite

Applications Include – communication systems, cellular telephones, filter networks, telemetry

Drum Cores

Inductance – 3.3µH to over 250mH

Current – up to 30A

Tolerance – 5%, 10% and 20%

Packaging – loose or tape and reel

Covering – heat shrink or ferrite sleeved versions available

Mounting – through hole and surface mount

Application include – power supplies, class D amplifiers and speaker crossovers

RFID

Inductance – 250nH to 23.8mH

Tolerance – 2%, 5% and10% others to order

Core types – air core, ceramic, phenolic, ferrite and iron powder

Packaging – loose or tape and reel

Applications include – various frequency segments including 60KHz, 125KHz, 134KHz, 8.3MHz, 13.56MHz, 432MHz and 915MHz

Transformers

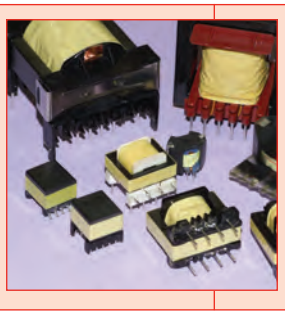
Types – linear and switching

Core material – laminated steel, laminated nickel, iron powder and ferrite

Power rating – from 0.2VA to over 500VA

Styles – through hole and surface mount, open frame, potted, planar and traditional winding methods

Applications include – dc-dc converter, ac-dc or dc-ac power supplies, impedance matching



Custom

All of the products listed can be tailored to customer requirements.

Our in house tooling and moulding facility can provide fast turnaround together with competitive pricing.

Cambion® are able to take your project from concept through prototype to low cost, high volume production with industry recognised standards.

CAMBION®
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full line catalogue


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Certificate of Registration
QUALITY MANAGEMENT SYSTEM - ISO 9001:2008


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Certificate of Registration
ENVIRONMENTAL MANAGEMENT SYSTEM - ISO 14001:2004

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