



TOROIDY

**LACHOWSKI
TRANSFORMERS**

Product catalogue





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WE COMBINE
CUTTING-EDGE
TECHNOLOGIES,
PROVEN METHODS
AND PASSION.

FOR NEARLY THREE DECADES, WE HAVE BEEN MAKING TOROIDAL TRANSFORMERS AND OTHER COMPONENTS FOR ELECTRICAL OR ELECTRONIC DEVICES, MACHINES AND SYSTEMS.

Our company is built on the knowledge and skills of specialists - enthusiasts of the highest order, which is why we continuously improve our products and enrich our product range with new innovative solutions. Curiosity and openness are what makes us tick, which is why we undertake highly demanding projects and participate in prestigious projects for distinguished brands.

Toroidal transformers are at the core of our offer. They can be used in projects of various scales and in numerous industries, including military, aviation or audio. Our other products include power supplies, rotational speed controllers, coils, chokes and DIY materials that can be used to build custom audio devices.

Our products are dedicated to both industrial manufacturers and individual "DIYers". Regardless of the order's scale or complexity, we can guarantee professional consultations and full commitment on our team's part.



THEY TRUSTED US

Over nearly 30 years of operations our company has completed many interesting and prestigious projects. We have cooperated with brands such as: Lampizator, Copland, Audio Valve, Fezz Audio, Bumar - Polski Holding Obrony, Stocznia Marynarki Wojennej, PZL-Świdnik, Lyson, SeaKing for which we created devices of the highest quality and received favourable opinions.

OUR VALUES

Bearing our customers' needs and expectations in mind, we are guided in everything we do by strictly defined values that enable continuous development and the provision of unique solutions in the field of toroidal transformers and accessories.



COMPREHENSIVE AND FUNCTIONAL

are our keywords. It's on these foundations that Toroidy has grown into one of the two brands in the world that produce toroidal audio signal transformers.



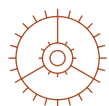
INNOVATION

R&D work conducted from our very inception has contributed to the development of a number of patented solutions.



QUALITY

our products are worry-free thanks to well-developed, organised production and measurement processes.



CUSTOMISATION

we adapt to our customers' needs and provide full professional support within the scope of demanding projects and unique product specifications.



EXPERIENCE AND OPENNESS

to even the most complex projects - with over 30 years of accumulated know-how we're able to participate in prestigious projects of extraordinary brands from various industries, including military, aviation and audio.





EXPLORE OUR RANGE
OF PRODUCTS TO
LEARN MORE ABOUT
THE TECHNICAL
CAPABILITIES AND
PRODUCT CATEGORIES
AVAILABLE UNDER
THE TOROIDY BRAND.



OFFER

Toroidal transformers are at the core of our offer. They can be used in projects of various scales, from individual to industrial, and in numerous industries, including military, aviation or audio.

We produce three grades of toroidal transformers in the following categories: mains power transformers, output transformers, isolation transformers, transformers for light sources, as well as accessories in the form of transformer bases and assembly accessories. The product range is rounded out by power supplies, fan speed regulators, coils, chokes, current transformers, DIY audio device housings and custom projects made to individual order



OWN MANUFACTURING:

- TOROIDAL TRANSFORMERS
 - mains power transformers in standard, audio and supreme grades
 - speaker output transformers (signal) in the audio and supreme grades
 - three-phase transformers
 - high voltage transformers
 - isolation transformers (for wet operation) with and without a housing
 - transformers for lighting and signalling
 - bases for transformers
 - mounting accessories
- STEP-UP AND STEP-DOWN AUTOTRANSFORMERS WITH A PLASTIC OR METAL HOUSING, OR WITHOUT A HOUSING
- FAN SPEED CONTROLLERS WITH OR WITHOUT A HOUSING
- COILS
- CHOKES
- CURRENT TRANSFORMERS
- DIY AUDIO EQUIPMENT HOUSINGS
- UNUSUAL CUSTOM PROJECTS





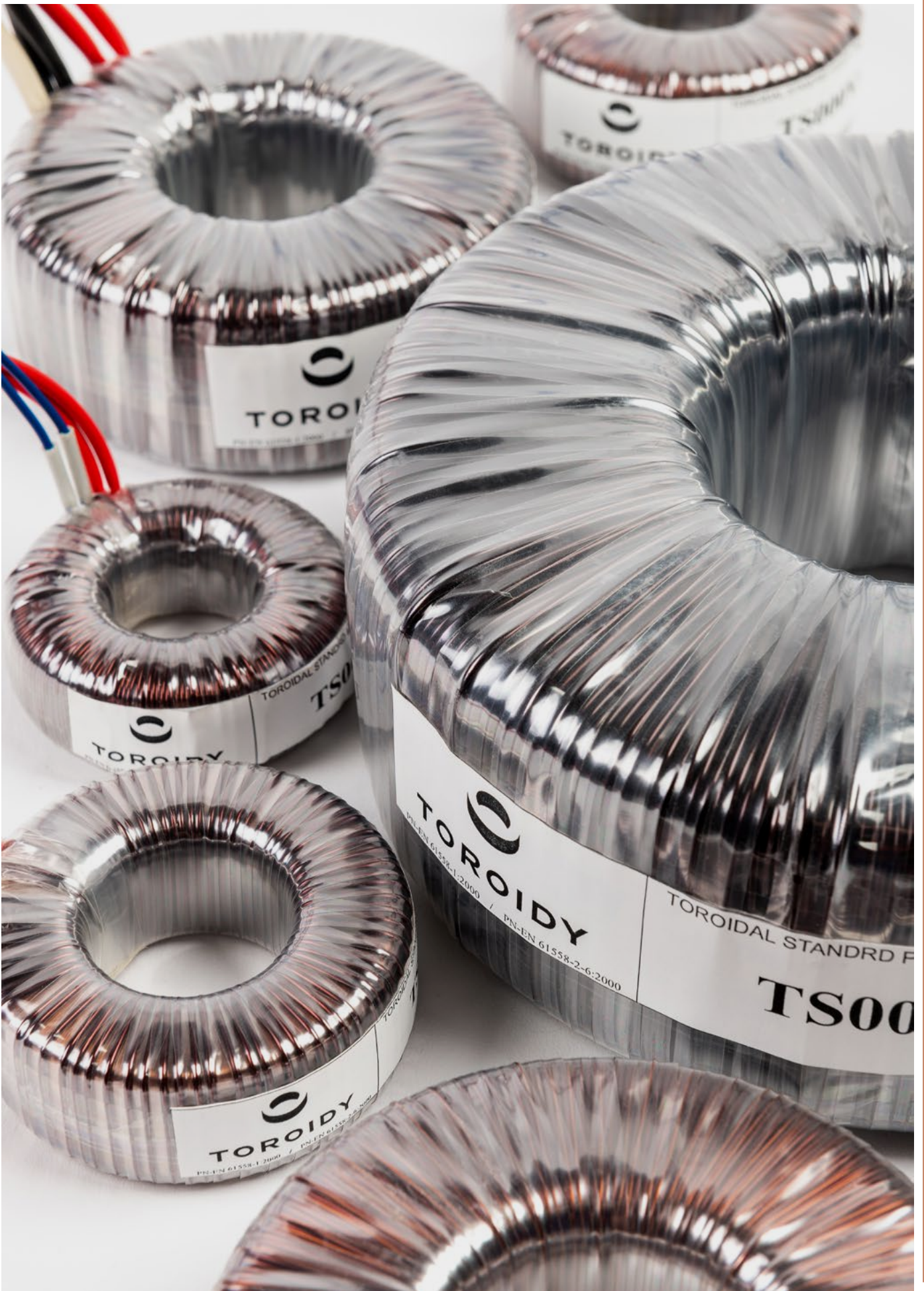
TOROIDAL TRANSFORMERS AND AUTOTRANSFORMERS



Toroidal transformers are manufactured with a capacity range of 10 VA - 6000 VA and for a wide range of output voltages and applications. Projects tailored to the customer's needs are our speciality, allowing us to build transformers with specific dimensions and modify any type of transformer.

Transformers can be equipped with additional components or improvements, which require a change to the transformer's class, for example:

- impregnated core and windings
- electrostatic shielding (between windings)
- magnetic shielding (external GOSS band)
- thermal protection
- inrush current limiter
- epoxy resin filling
- anti-vibration mounting (plastic or metal with washers)



STANDARD MAINS POWER TRANSFORMERS



Standard class (industrial) mains power transformers are designed to work with low-voltage power supply and lighting systems. The toroidal core ensures maximum efficiency, limited stray fields and compact dimensions. These transformers are manufactured to fulfill class II insulation and IP-00 protection class requirements, in accordance with the EN 61558 standard. We can design and produce any PRI and SEC voltage, exactly as required by our customer.

TECHNICAL DATA

Nominal power:
20 – 4000VA

Primary voltage range:
1 – 500V

Frequency:
50 – 60Hz

Secondary voltage range:
1 – 1000V (any winding configuration)

Construction / Insulation class:
II / B (130°C)

Ambient temperature:
40°C

Protection rating:
IP-00

Insulation test:
4kVAC (RMS)

AUDIO MAINS POWER TRANSFORMERS



Audio and supreme grade toroidal transformers are capable of meeting the needs of even the most demanding electro-acoustic applications. They ensure the highest quality, noiseless operation and exceptional electrical parameters. They are custom manufactured to meet the customer's requirements. The degree of modifications and the equipment used in the ordered transformer are determined by the customer. In making products offering such outstanding parameters we use only laboratory-selected components of the highest-quality.

Possible modifications:

- impregnated core and windings
- electrical shielding (between windings)
- magnetic shielding (external interference shield)
- resin filling and anti-vibration mount

TECHNICAL DATA

Nominal power:
20 – 3000VA

Secondary voltages:
any

Primary voltages:
any

SUPREME MAINS POWER TRANSFORMERS



Audio and supreme grade toroidal transformers are capable of meeting the needs of even the most demanding electro-acoustic applications. They ensure the highest quality, noiseless operation and exceptional electrical parameters. They are custom manufactured to meet the customer's requirements. The degree of modifications and the equipment used in the ordered transformer are determined by the customer. In making products offering such outstanding parameters we use only laboratory-selected components of the highest-quality.

Possible modifications:

- impregnated core and windings
- electrical shielding (between windings)
- magnetic shielding (external interference shield)
- resin filling and anti-vibration mount

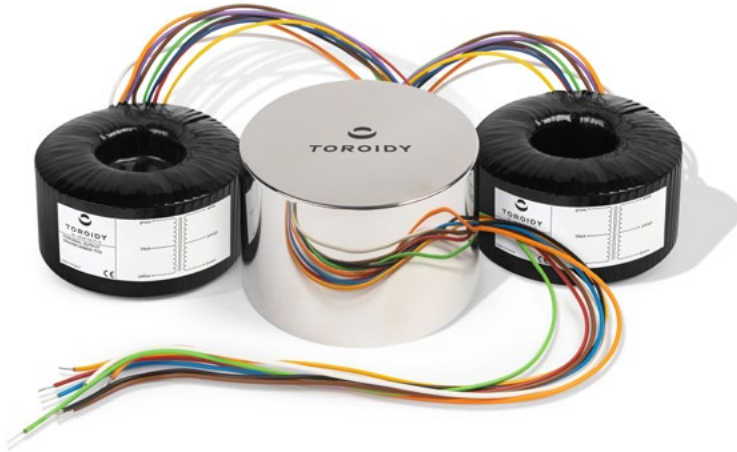
TECHNICAL DATA

Nominal power:
20 – 3000VA

Secondary voltages:
any

Primary voltages:
any

OUTPUT TRANSFORMERS



Toroidal output transformers exhibit an exceptionally wide frequency response and low distortion combined with a very high Q factor.

Our innovative core production technology allows us to provide perfectly linear magnetic characteristics, which results in a signal that is clean, with a wide soundstage, undisturbed and rich in detail over all frequency ranges.

Our offer includes transformers used in the most commonly used vacuum amplifier circuits. A high-end version of output transformers, offered in decorative, hand-polished stainless steel enclosures, is also available – the Supreme series. In the case of devices with vacuum tubes other than those we propose, please contact us.

Typical circuit designs:

- Push-Pull
- Single-Ended
- Parallel Single-Ended
- Cathode Feedback PP

T3S THREE-PHASE TRANSFORMERS



T3S three-phase transformers are intended for general use in industrial and power grid systems. They offer full galvanic isolation between the primary and secondary side. Toroidal cores ensure maximum efficiency, limited stray fields and compact dimensions.

The T3S line is built based on toroidal magnetic circuits and manufactures to fulfill class I insulation and IP-00 / IP-20 protection class requirements, in accordance with the EN 61558 standard. Ambient temperature 40°C, thermal insulation class B (130°C).

The transformers can be built according to the customer's specification (any PRI and SEC voltage) and equipped with the following components:

- screens: magnetic and electrostatic
- thermal protection
- inrush current limiter
-

Possible connections:

- screw terminals
- socket / plug
- other – according to the customer's needs

TECHNICAL DATA

Nominal power:

1 – 25kVA

Primary voltage range:

100 – 500V

Frequency:

50 – 60Hz

Secondary voltage range:

24 – 1000V

Construction / Insulation class:

I / B (130°C)

Max. ambient temperature:

40°C

Protection rating:

IP-10

Insulation test:

4kVAC (RMS)

Typical efficiency (depending on power):

95% – 98%

Typical circuit layout:

Dyn11

HIGH-VOLTAGE TRANSFORMERS



HV toroidal high-voltage transformers are single-phase, power grid toroids manufactured to fulfill class 0 insulation and IP-20 to IP-65 protection degree requirements, in accordance with the PN-EN 60076-3:2000 standard.

The unique design and exceptional manufacturing technology used in high-voltage sectional transformers allow them to reach the highest possible levels of efficiency and reliability.

HV transformers are custom manufactured to meet the customer's requirements. The nominal power of high voltage transformers typically ranges from 100VA to 500VA with a turn ratio ranging from 1:1.1 to 1:30.5 and with a maximum output voltage of 7000V.

Additional equipment:

- Thermal protection
- Static shielding
- Electromagnetic shielding

TECHNICAL DATA

Nominal power:
100VA – 500VA

Supply voltage:
100 – 400V

Frequency:
50 – 60Hz

Output voltage:
0,25kV – 7kV

Rated current:
up to 2A

Protection rating:
IP-20 / IP-65

Insulation strength PRI/Core:
10kVAC (RMS)

Insulation strength PRI/SEC:
10kVAC (RMS)

ISOLATION TRANSFORMERS

(FOR INTEGRATION AND IN A PORTABLE HOUSING)



Portable isolation transformers in hermetic casings are available with two power supply options: 230/230V and 230/110V. They are designed for supplying power tools and other devices requiring galvanic isolation from the power supply grid.

Their robust housing, dust- and waterproof (IP44), is suitable for work in difficult conditions, also outdoors. High power transformers are equipped with an inrush current limiter as standard. The 2.5 m power cord is terminated with a 230V mains power plug. The enclosure holds a fuse.

We also offer transformers without a housing with nominal power up to 4000VA and in any voltage configuration.

TECHNICAL DATA

Nominal power:
500 – 4000VA

Supply voltage:
230V

Frequency:
50 – 60Hz

Output voltage:
230V lub 110V

Ambient temperature:
40°C

Protection rating:
IP-44

Two output sockets:
230V – 1x 230V Uni-Schuko / 16A
oraz 1x 230V

6h 16A 2P+E IP44

POWER SUPPLIES IN PLASTIC OR METAL ENCLOSURES

(230/115V AND 115/230V TYPE ATS)



Autotransformers with 230/115V support for devices of American or Japanese origin are available in two types of enclosures: metal and plastic. They are equipped with 115V sockets, so no modifications to the equipment are needed.

We also offer 115/230V autotransformers that allow European devices to be powered in countries with 115V mains power.

High power units are also available in a version with an inrush current limiter.

TECHNICAL DATA

Nominal power:
20 – 5000VA

Supply voltage:
230V lub 115V

Frequency:
50 – 60Hz

Output voltage:
115V lub 230V

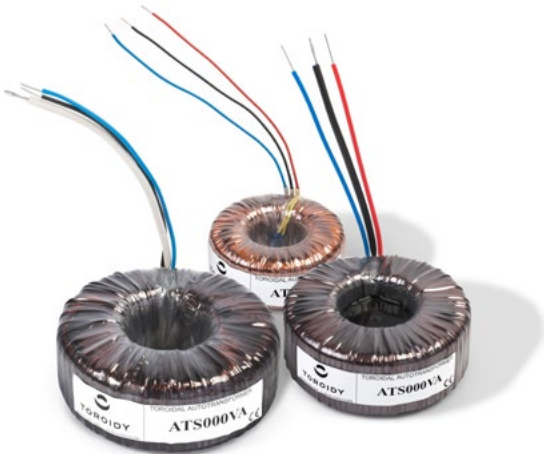
Ambient temperature:
40°C

Protection rating:
IP-30 lub IP-65



POWER SUPPLIES WITHOUT AN ENCLOSURE

(ATSBO)



Single-phase toroidal autotransformers are manufactured in line with the EN 61558 standard. Our company manufactures toroidal autotransformers with any electrical parameters requested and any number of output taps. The toroidal core ensures maximum efficiency, limited stray fields and compact dimensions.

Autotransformers can be built according to the customer's specification and equipped with the following components:

- magnetic and electrostatic shielding
- thermal protection, self-resettable
- mounting brackets, also for a DIN rail
- inrush current limiter
- resin-filled interior

TECHNICAL DATA

Nominal power:
20 – 2000VA

Supply voltage:
1 – 500V

Frequency:
50 – 60Hz

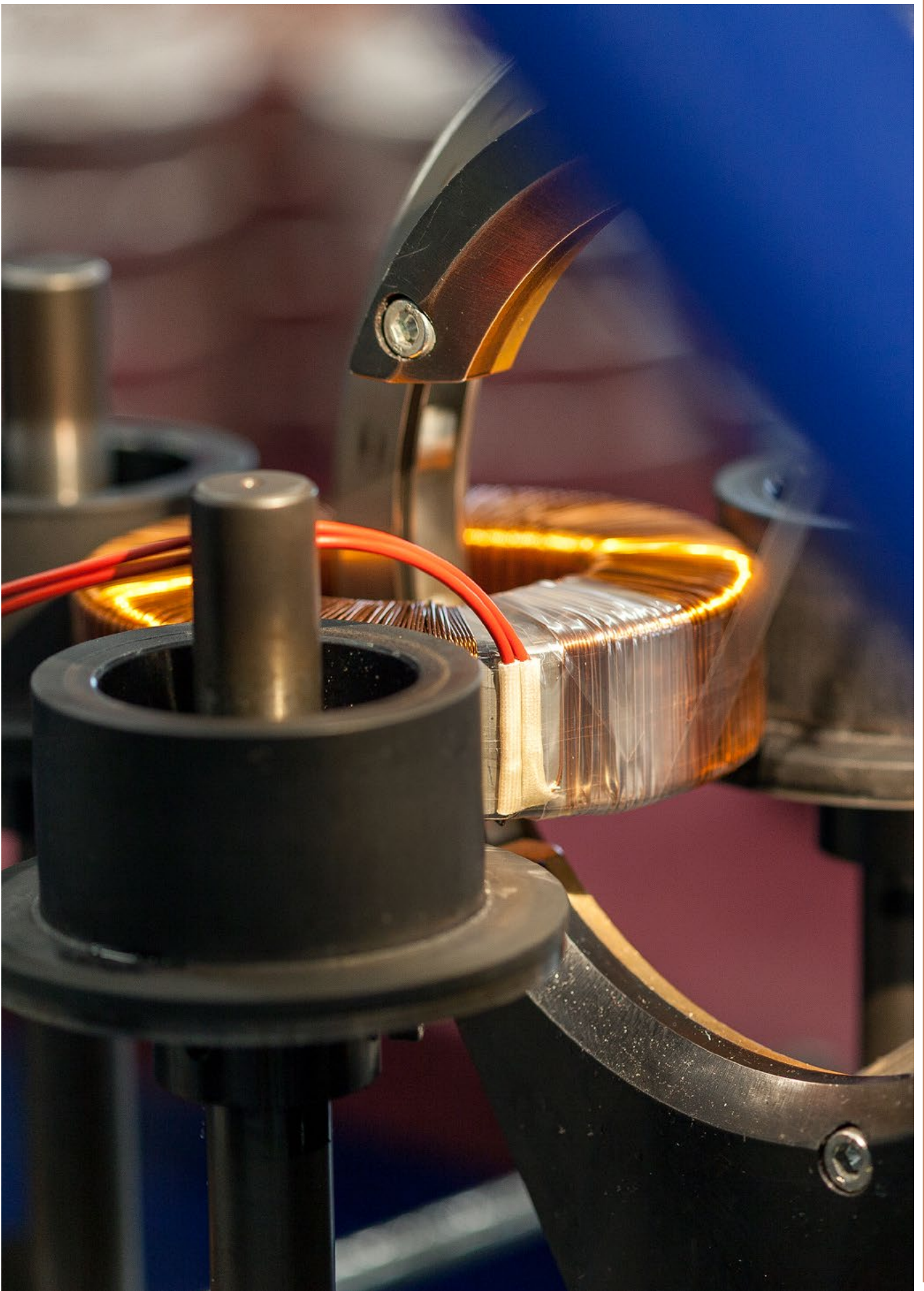
Voltages:
10 – 1000V

Construction / Insulation class:
I / B (130°C)

Ambient temperature:
40°C

Protection rating:
IP-00

Insulation test:
4kVAC (RMS)



TOROIDAL CHOKES



Toroidal chokes are primarily used in anode power supply systems of vacuum tube amplifiers. Through the use of innovative toroidal cores production and winding technology, compared to EI-chokes, we have achieved exceptional electrical parameters. Major advantages are: minimal external magnetic leakage fields, noiseless operation and much lower DC resistance.

The wide range of inductance values and rated currents (DC 100, 200, 300, 400, 500mA) means that our chokes will satisfy even the most demanding customers.





WE ARE AT YOUR
DISPOSAL AT EVERY
STAGE OF THE PROJECT.

PLEASE DO NOT HESITATE TO CONTACT US.

Please do not hesitate to contact us. We provide reliable counsel and our full commitment, which allows for efficient implementation of all, even the most complex projects.

info@toroidy.pl

Phone: +48 85 733 77 73

facebook: toroidy

toroidy.pl

HEADQUARTERS (ADDRESS FOR CORRESPONDENCE):

Toroidy.pl Transformatory L.Lachowski Sp.k.

Kolonia Koplany 1E

16-061 Juchnowiec Kościelny

REGISTRATION DATA:

Toroidy.pl Transformatory L.Lachowski Sp.k.

ul. Mazowiecka 20

16-001 Księżyno

NIP: 9662097351

REGON: 361410043

KRS: 0000556256



1992

Lech Lachowski starts his business.

2005

Patents for a three-phase toroidal transformer and a toroidal isolation transformer are obtained.

2013

A patent for a toroidal high voltage transformer is obtained.

2015

Transformation into a company – succession of the sons: Maciej and Tomasz Lachowski.

2019

Move to new headquarters.

2021

A patent for an air-gap toroidal signal transformer is obtained.



