InTiCa Systems

… a technology company introduces itself

Technology for growing markets

InTiCa Systems is a leading supplier in the development, manufacture and marketing of inductive components, passive analog circuit technology and mechatronic assemblies.

Our Engineers and Technology are set to be your partner in new developments

The start of an ongoing transformation

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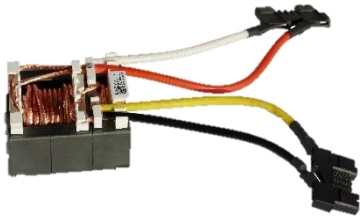
Strategy | Product groups

Power electronics



EMC filters

Actuators

Stators E-engines

Sensors

As a leading supplier of inductive components, the **five product groups** of power electronics, EMC filters, actuators, stators and sensors offer the **decisive potential** for **corporate development**, especially in the field of **E-Solutions** and **E-Mobility**.

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Strategy | Fields of competence in Automotive

Stator coils systems for Turbo charger motors

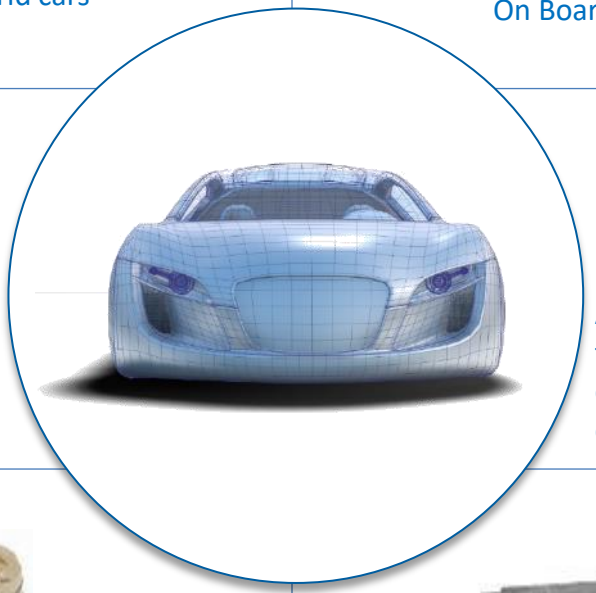
Stator coils Electrical engine for Hybrid cars

Power Chokes for On Board Chargers

EMC filters for Battery Management systems or inverters

Overmoulded solenoid for Energy and engine management

Planartrans-formers for inverter



Actuatorcoils for Turbo chargers, level control units

Power Transformers for Battery management, inverter, on board chargers…

Transponder for Drive authorization systems

HF antennas for Tire Pressure monitoring systems (315 MHz

Keyless entry antennas for different frequency range

Planartransformer for Unit control systems in hybrid vehicles

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Strategy | Fields of competence in Industry & Infrastructure

Choke

Actuator coil

Boost Modul AC

Power components

Automation and drive engineering

Choke

Transformers for electricity meters

Boost modules

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Product group
Actuator coils for motor management

Actuator coils are e.g. For regulating the injection pressure in the engine management.
The actuators are magnetized by the controlled current supply. As a result, the injection of the fuel can be actively engaged in the combustion chamber of the engine. Higher pressures in the fuel injection refining the fuel cloud and thus the consumption can be reduced, and the performance can be increased. The main factor is the high number of windings due to the high copper filling factor.
This can only be achieved by a so-called orto-cyclical winding. With this type of winding, a max. Filling factor of 90.7% can be achieved. That is, Only 9.3% of the entire winding area is not filled with copper (air). In the case of a normal "wild" winding, approximately 75% fill factor is used as standard.
Key customers: Kendrion, Marquardt, Bosch

Oil Change Valve

VCV Coil

HPV MDEG Coil

Sectional View of HPV MDEG Coil

POWER ELECTRONICS
Increasing efficiency

Power electronics is an area of electronic technology that focuses on the use of electronic switching elements to convert electric power. The main products are inverters, charging systems and network switches.

These products can convert voltage levels, power and frequency. Normally, power electronics components comprise an electrical control unit, an inverter and a DC converter.

Power electronics has become more important as a result of progress in microelectronics and the associated improvement in control and regulation technology. For example, power electronics are found in the power drivetrain in all hybrid and electric vehicles.

Application examples

Automotive Technology

InTiCa Systems supplies customer-specific solutions in the form of high-voltage transformers and chokes. Applications include on-board chargers and stationary charging points. To meet technical specifications, the company uses special manufacturing processes (for example, special winding technology) and materials (for example, special magnetic materials).

Industrial Electronics

InTiCa Systems develops and manufactures AC filter chokes, boost converters and booster chokes, high-frequency transformers, and inductive modules for solar converters. The company specializes in the 0-300 kW power range with a switching frequency of 16-50 Hz. It uses its own measuring platform to optimize the loss profile of coils at an early stage of development.

EMC FILTERS
Electromagnetic compatibility

The rising number of appliances that produce and use energy is increasing demand for EMC filters for electromagnetic suppression. Unwanted interference between appliances can degrade performance of the power supply and onboard systems. Therefore, it has to be suppressed to prevent unwanted disruption.

Inductive properties combined with capacitors are the most common type of EMC filter. InTiCa Systems is already seen as a development partner, producer and system supplier of EMC filters. Demand for energy sources and electrical and electronic devices will continue to increase in the future, creating rising demand for EMC filters.

Application examples

Automotive Technology

InTiCa Systems supplies complex components and systems to meet specific challenges of electromagnetic interference resulting from the increasing "electrification" of hybrid and electric vehicles.

Industrial Electronics

EMC filters are indispensable components in many electronics applications in industry. InTiCa Systems supplies EMC filters that ensure interference-free use of industrial products. Its portfolio includes common mode chokes in all common designs, filter modules and filter assemblies for stationary energy storage systems.

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ACTUATORS
Controlling motion

The term actuator normally refers to the use of electrical energy to generate a movement or deflection. Actuators are used in many technical applications, for example in drive technology, valve technology and locking systems. InTiCa Systems specializes in the production of various types of actuator coils, which can be used in a wide range of applications in measurement control and regulation technology.

They are used in almost all sectors of industry because their applications are virtually unlimited. As in all other product areas, the product solutions supplied by InTiCa Systems are tailored specifically to customers' requirements.

Application examples

Automotive Technology

Actuator coils (magnetic hub coils) are frequently used for electronic handling. InTiCa Systems offers custom-tailored assemblies. Applications include electromagnetic steering wheel locks, gearshift interlocks, electro-hydraulic steering systems and self-levelling systems.

Industrial Electronics

InTiCa Systems develops and manufactures magnetic coils for incinerators and for switching components to interrupt power supply.

STATORS
Electromagnetic transformation

Stator coils are used in electric drives that convert electrical energy into mechanical power. A wide variety of different designs and electrical solutions are available. The aim is to steadily reduce the dimensions and weight of coils and to increase their electrical efficiency.

Development and production at InTiCa Systems meet the highest quality and functional requirements to ensure that products can withstand the most extreme environmental conditions. The right mix of materials and processes is vital to maximize the efficiency and stability of the products.

Application examples

Automotive Technology

For its customers InTiCa Systems develops and produces stators for hybrid and electric vehicles and turbocharger systems. Product designs include a wide variety of technologies (for example, overmoulding) and materials (for example, insulating materials, laminated structures).

Industrial Electronics

InTiCa Systems supplies stator coils for industrial applications such as pump motors. The company can provide both injection moulded coils for single-tooth stators and plug-in coils.

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SENSORS
Transmitting signals

In this area InTiCa Systems mainly focuses on low frequency (LF) antennas and immobilizers.

LF antennas are a key component in keyless entry/go systems, which allow drivers to open the car door and start the engine without having to press a button on the radio frequency key. Antennas integrated into the door handles and the interior of the vehicle act as sensors. Bidirectional communication takes place between the vehicle and the key. If a key is recognized at a certain distance from the vehicle or if the vehicle is touched at certain places (e.g. the door handle), the vehicle can be opened or closed without using the key.

Immobilizers are another group of sensor products. Together with a transponder and the associated control unit, the immobilizer prevents the engine being started without authorization.

Application examples

Automotive Technology

InTiCa Systems supplies antenna and transponder technology for keyless entry/go systems. The company uses its specialist knowledge of electromagnetic fields for technical development. Antennas and transponders can be supplied as cast, injection moulded and open versions.

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Strategy | Innovation Engineering – Process development

Plastics technology

Winding technology

Joining technology

Testing technology

Automation & Assembly

Injection molding technology with various insert and overmolding technologies, outstanding winding processes as well as joining technologies, fully automated product testing, innovative assembly and automation technologies ensure the **efficiency** and **profitability** of the **manufacturing processes**.

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