

www.schurter.com/emc

EMC Products & Services

 **SCHURTER**
ELECTRONIC COMPONENTS

Efficient EMC Solutions



> EMC-Competence





SCHURTER
ELECTRONIC COMPONENTS

SCHURTER has the capabilities and expertise to ensure electromagnetic compliance (EMC), in order to prevent appliances from interfering with one another through unwanted electrical or electromagnetic effects. This involves understanding the technical and legal regulations that are established to prevent reciprocal interference in electrical engineering. Our team of EMC specialists offers a comprehensive and professional EMC testing service using one or more of our several production sites, which are certified according to ISO 9001 and ISO 14001. The manufacturing process is overseen by quality management. From receipt of incoming goods all the way through to front-end customer service, quality measurements are applied.

SCHURTER is a leading partner of the electronics and electrical industries for passive and electromechanical components such as: fuses, circuit breakers, connectors, EMC products and input systems. We focus on components ensuring clean and safe supply of power, as well as ease of use. Products are developed, manufactured and distributed over a professionally organized network of regional representatives and distributors worldwide, always according to the requirements of our customers.



«Searching for a line filter, I found what I was looking for at SCHURTER. Working together with them, I was thrilled at how openly they communicate.»

**Marcel Lendenmann, Head of Product Management,
Coffee Machine Manufacturer, Switzerland**

SCHURTER
ELECTRONIC COMPONENTS

> Requirements & Solutions

The use of electrical energy always involves its transformation into other forms of energy, such as radiant energy (light bulbs), mechanical energy (motors) or heat. Transforming or transporting electrical energy causes electromagnetic fields that do not necessarily remain within the electrical appliances, but may also spread outside the appliance into the air or to the power supply. Fields that are allowed to spread freely may penetrate electrical appliances and affect their performance. These fields are perceived as interference. EMC interference sources include:

- Electromagnetic fields, deliberately generated by transmitters operating in frequencies ranging from a few kHz up to more than 30 GHz (microwaves).
- Lightning strikes.
- Switching events in low-voltage networks cause high-energy surges.
- Switching events in power electronics (switching power supplies) cause high-frequency transients and flicker.
- Nuclear Electromagnetic Pulse (NEMP) caused by a nuclear explosion.
- Electrostatic discharges – ESD.
- High-frequency signals caused for instance by load changes in microprocessors or when using frequency converters.



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Standards, Requirements, Limits

According to the law, electrical appliance manufacturers must ensure EMC compliance by putting in place appropriate protection requirements. The statutory limits regarding interference resistance or interference radiation have been specified in relevant standards. Over the last few years, the statutory limits and regulatory frameworks in Europe have been harmonized in accordance with the new 2004/108/EC EMC guideline, and equivalent standards for North America.

For detailed explanations regarding the legal requirements and measurement methods, please refer to General Product Information, which can be downloaded here: www.schurter.com/info_emc

Household, Lighting and Telecom

Residential, commercial and light industrial

Emission

IEC 61000-6-3 (EN 50081-1)
 EN 55014 Household Applications and Tools
 EN 55022 for ITE (Information technology equipment)
 Harmonics (IEC 61000-3-2)
 Voltage fluctuations (IEC 61000-3-3)

Immunity

IEC 61000-6-1 (EN 50082-1)
 IEC 61000-4-2 ESD
 IEC 61000-4-3 HF field
 IEC 61000-4-4 Burst
 IEC 61000-4-5 Surge

Industrial Applications

(ISM) Industrial, scientific and medical, high-frequency appliances

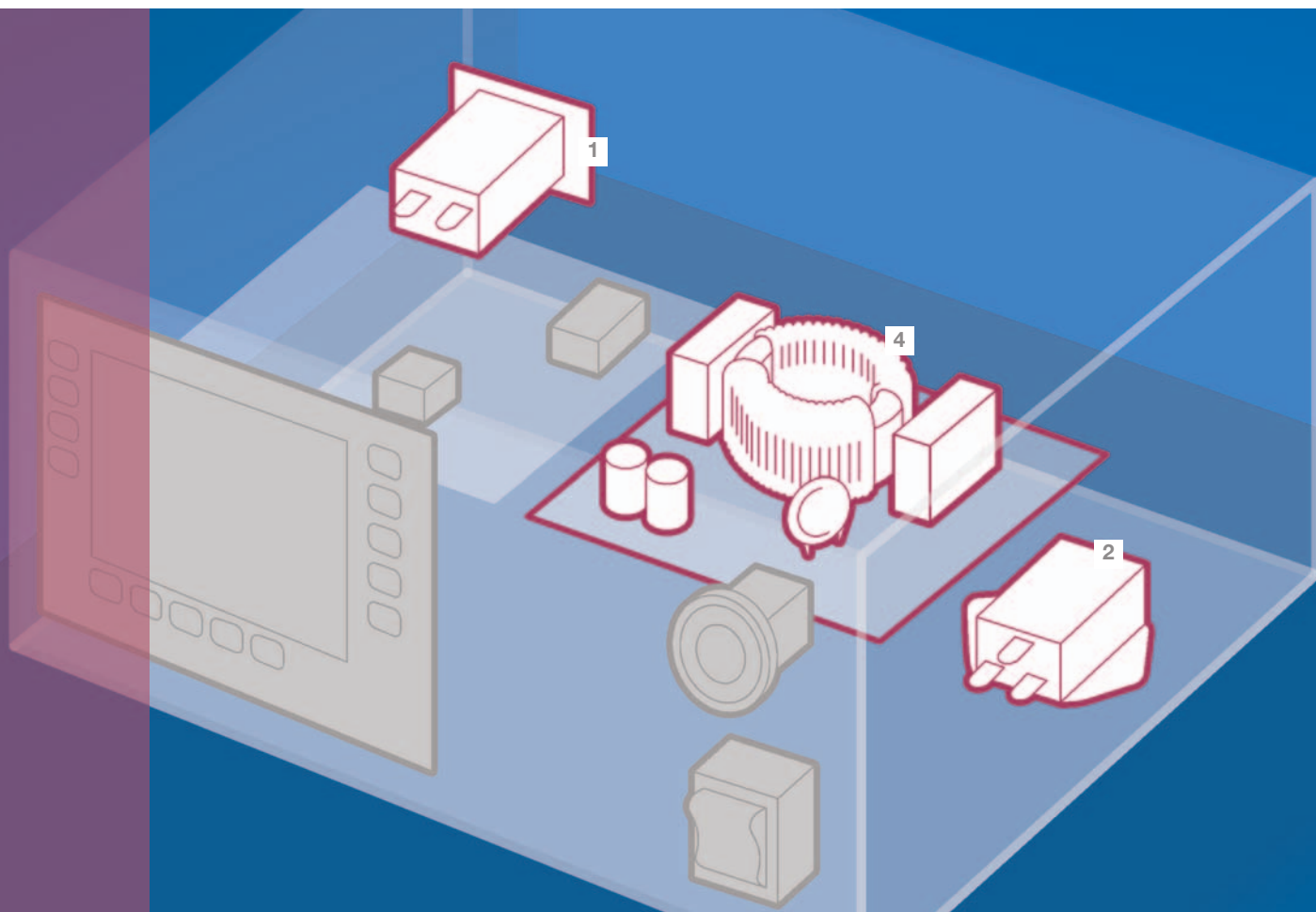
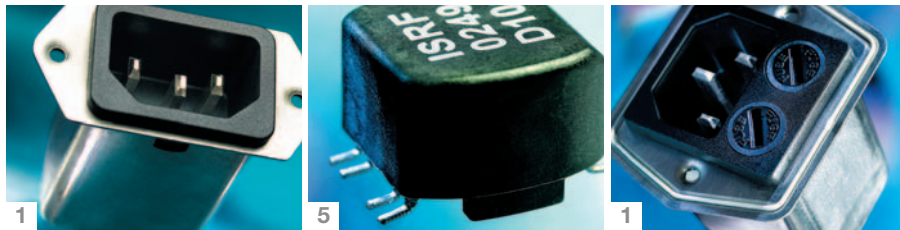
Emission

IEC 61000-6-4 (EN 50081-2)
 EN 55011
 Harmonics (IEC 61000-3-2)
 Voltage fluctuations (IEC 61000-3-3)

Immunity

IEC 61000-6-2 (EN 50082-2)
 IEC 61000-4-2 ESD
 IEC 61000-4-3 HF field (casing)
 IEC 61000-4-6 HF field (lines)
 IEC 61000-4-4 Burst
 IEC 61000-4-5 Surge
 IEC 61000-4-8 NF magnetic field (only for appliances sensitive to magnetic fields)

IEC 61000-4-11 Voltage variations



> EMC Product Range

1 | Power Entry Modules with Line Filter

SCHURTER power entry modules are based on IEC connectors with line filters (some models may include additional features) and meet international safety standards. Current ratings range from 2.5 to 20 A. Available to suit various mounting methods.

2 | Single Phase Line Filters

Single phase EMI line filters meet international safety standards. Current ratings range from 0.5 to 36 A. Available for PCB or chassis mounting.

3 | 3-Phase Line Filters

3-Phase EMI line filters meet international safety standards. Current ratings range from 3 to 115 A at 275, 480 and 520 V; Designed for chassis mounting.

4 | Chokes

SCHURTER suppression chokes are available as current compensated, linear, storage, saturating and ground wire types. Standard current ratings range from 4 to 50 A.

5 | Pulse Transformers

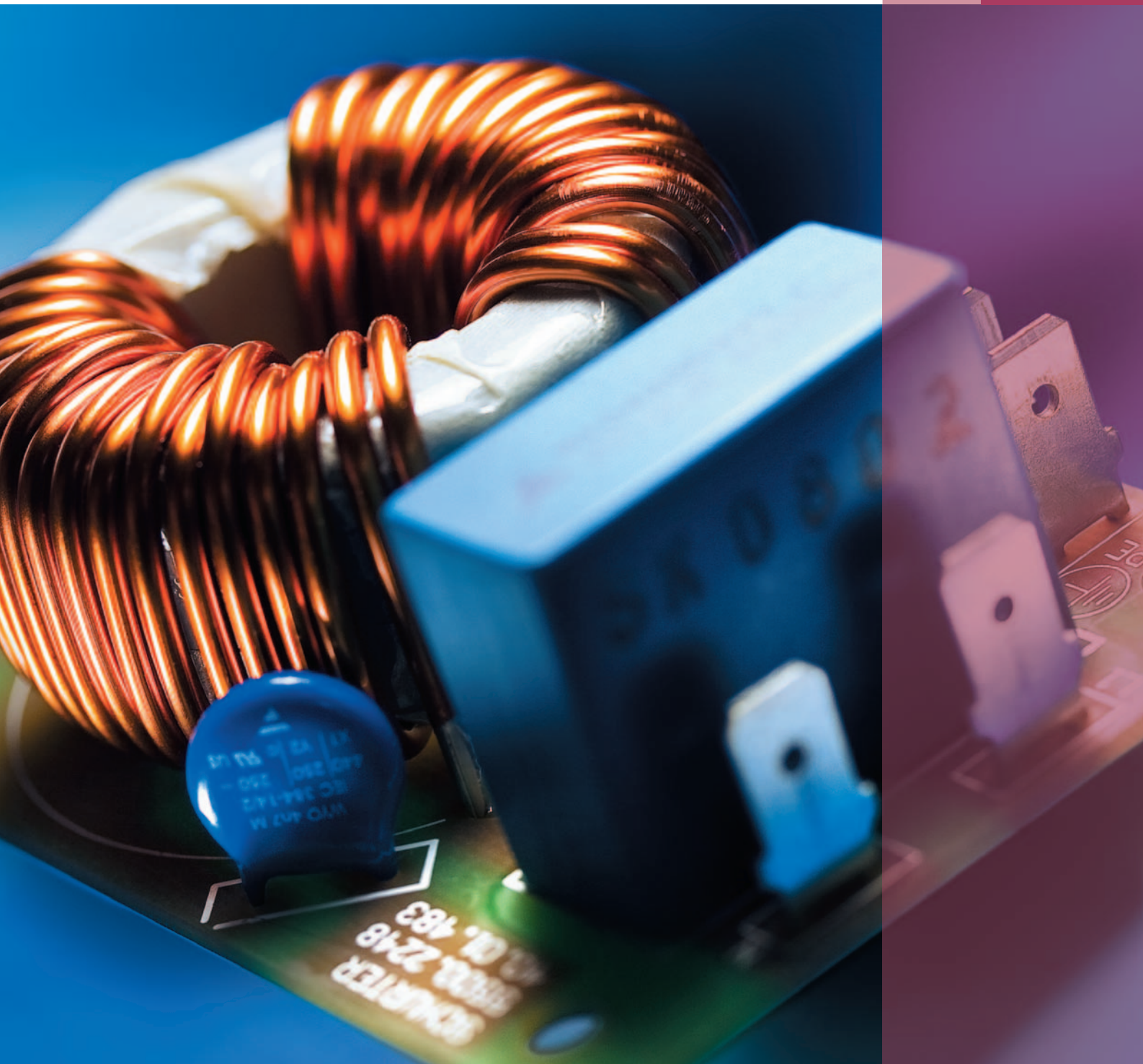
SCHURTER pulse transformers are designed to drive power electronics, providing dielectric isolation between drive controller and power output circuits.

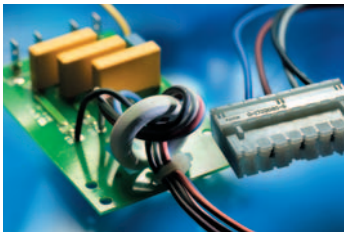
6 | Driver Modules

SCHURTER power stage driver modules (PSDM), like pulse transformers, are designed to drive power electronics and include additional control features.

> Individual Needs

In addition to its broad product range, SCHURTER also offers measurement services to ensure all customer requirements for EMC compliance.





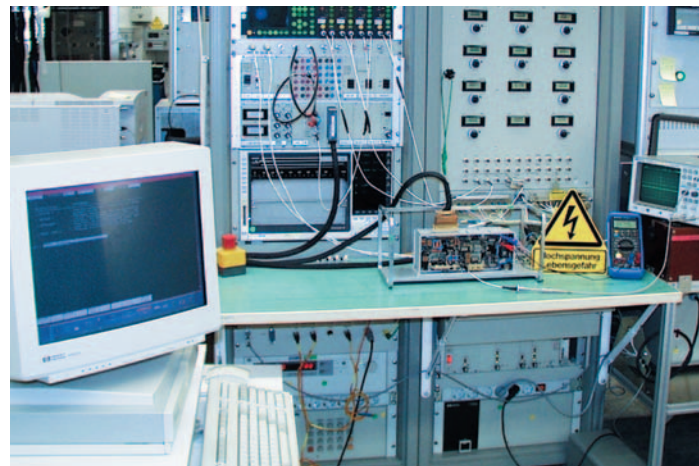
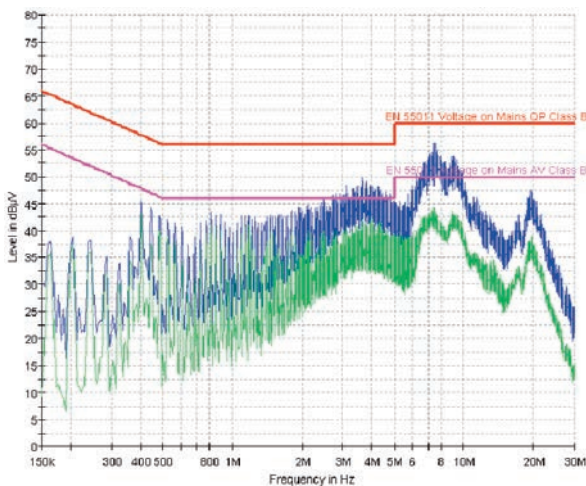
Success is our permanent incentive. We are used to being innovative to meet challenges in diverse markets, working toward and being part of our customers' solutions. Our R&D teams drive forward with new ideas and bold realizations each day anew.

Filters made to spec for System Integration

In addition to its attenuation properties, a filter's geometry and its system interface play decisive parts. Depending on where the filter is used, a filter casing is often not even necessary, making additional materials cost savings possible. Open frame filters are subsystems designed exactly to our OEM customers' specifications. SCHURTER will build a customer-specific solution exclusively for you.

Using Drive Systems more efficiently

Output filters are inserted between the converter and the drive to extend motor life and increase operating smoothness. Drive efficiency is thereby increased, making it more or less unnecessary to use shielding. Whichever type of converter, parameters or motor you use; SCHURTER will design and build an energy-efficient solution to perfectly suit your drive system.



Competence

To meet your requirements, SCHURTER will conduct the necessary preliminary immunity and interference tests of your electrical systems or equipment and, depending on the results, will then offer you appropriate standard or customer-specific EMC solutions.

All measurements will be performed by SCHURTER in accordance with the requirements as specified in the standards; interference measurements will be performed at our laboratory (IEC 61000-4-3 und IEC 61000-4-6).

To read extracts from our findings and draw from our rich experience, please refer to our white papers, which can be downloaded here:

www.schurter.com/white_paper

Measurement Report

The measurement results will be compiled in an EMC measurement report. This report will serve as proof of CE conformity.

WEB INFORMATION

The SCHURTER Web site is your place for all information on EMC.

At www.schurter.com you can select products, download our fact sheets containing all relevant details as well as the referenced general product information sheets, and you can contact us directly to place your technical inquiry. Our sales outlets or, if you prefer, our EMC R&D department will be more than happy to assist you.

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 **SCHURTER**

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connectors
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