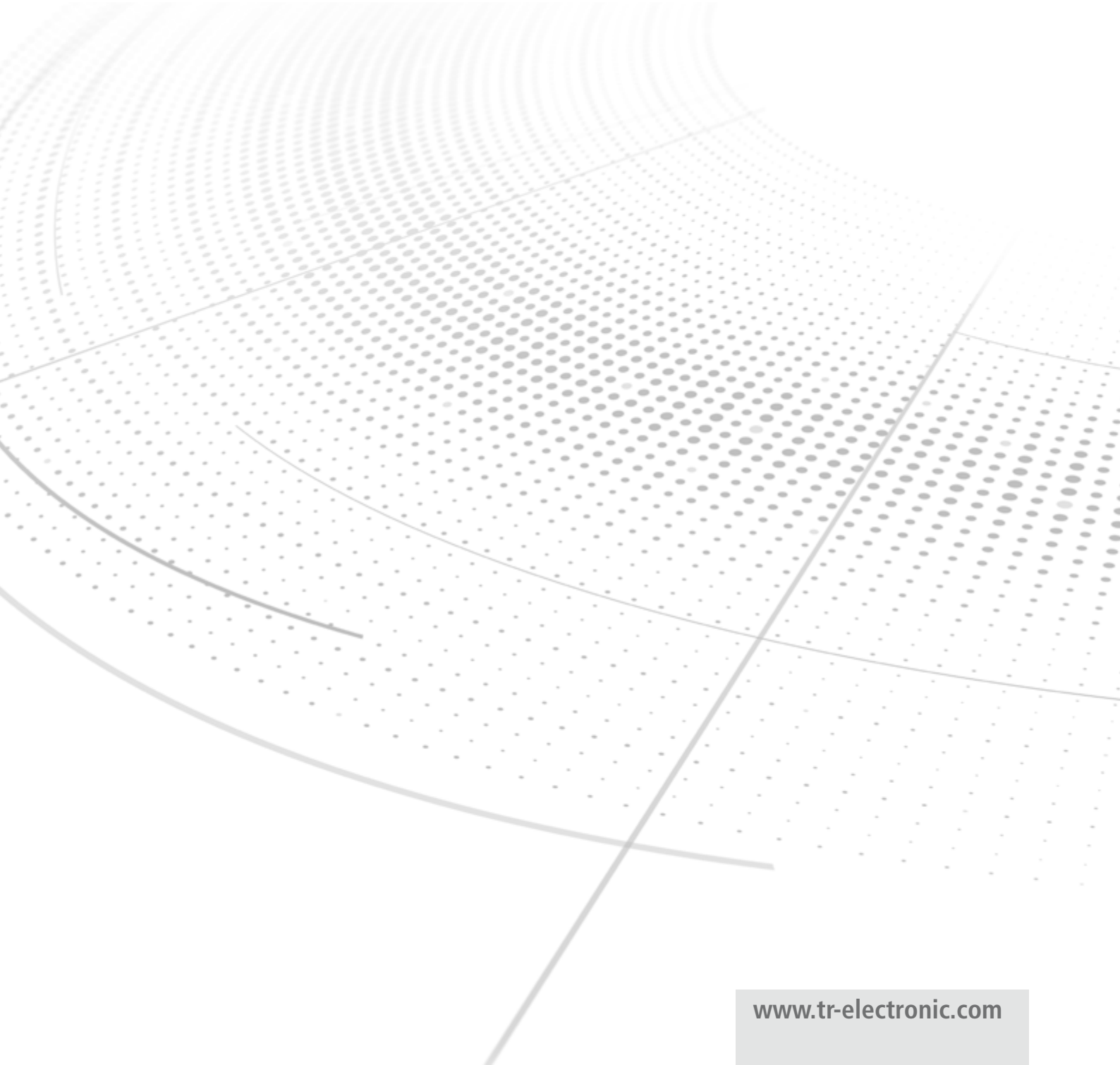


Test Laboratory

TR-Electronic's new milestone



All information and data can be found at:
www.tr-electronic.de/f/TR-V-PR-D-0030

Get information faster,
just scan QR code.



Test laboratory



TR milestone

TR-Electronic makes product quality and customer satisfaction its top priority. For this reason we are very committed to carrying out our own tests on the resistance of our products to environmental stress. Since 2016 we have had our own test laboratory, which also meets TÜV requirements.

Sensors and actuators can interact with their environment in a variety of ways. A correlation with the environment cannot be prevented. Tests are carried out to determine whether the devices can withstand the defined limit values. In these tests TR-Electronic GmbH examines the cause-effect

relationship between its products and the environment. We pursue an environmental approach to product development. For performing the tests the test laboratory has a facility with state-of-the-art equipment, in order to guarantee a precise measurement.

The equipment includes a climatic chamber, surge simulator, sine-wave generator, generator for conducted transients, ESD simulator, IMV vibration test system and a shaker.

Partner laboratories

Tests which cannot be carried out in the test laboratory are performed in cooperation with our partner laboratories. The partner laboratory examines criteria such as loading due to dust and splash water, as well as immunity to interference:

- _ high-frequency electromagnetic fields
- _ magnetic fields with magnetic frequencies
- _ radio interference, limit values and measuring processes



Test criteria

Temperature and climatic testing

The product functions can be restricted by climatic changes. Changes in air pressure can have a negative effect on various components; strong temperature fluctuations can lead to a reduced product lifetime.

A wide range of climatic and temperature conditions are covered in our test laboratory.

The C-70/600/S climatic test chamber from CTS enables testing according to temperature (temperature range -70°C to +180°C, temperature change speed; heating 3.5 K/min, cooling 3.0 K/min) and climatic conditions (temperature range: +10°C to +95°C, humidity range 10% to 98% relative humidity).

It is tested according to

- _ DIN EN 60068-2-1
- _ DIN EN 60068-2-2
- _ DIN EN 60068-2-30

EMC testinga

Electromagnetic compatibility refers to the ability of a device to operate satisfactorily in an electromagnetic environment, without itself causing electromagnetic interferences which would be unacceptable for other devices present in this environment. Sensors and actuators are tested for electrical compatibility in the test laboratory. For this purpose they are exposed to a wide range of conditions. The devices are tested in compliance with the European EMC directive.

Our test capabilities in relation to interference immunity are

- _ the discharge of static electricity (ESD)
- _ impulse voltages (surge)
- _ fast transient electrical disturbances (burst)
- _ conducted interference, induced by high-frequency fields (HF voltage)

It is tested according to

- _ DIN EN 55011
- _ DIN EN 61000-4-2, DIN EN 61000-4-3
- _ DIN EN 61000-4-4, DIN EN 61000-4-5
- _ DIN EN 61000-4-6, DIN EN 61000-4-8; further on request



Vibration testing

The products are tested in the test laboratory in compliance with standards with regard to their behavior and reliability under vibration and shock loads. A vibration exciter, the so-called shaker, is used for the test. The test object is fixed in a clamping fixture and connected to the vibrating table. Vibration and shock tests are carried out with the load types sine, noise and shock in our test laboratory and comply with European directives.

It is tested according to

- _ DIN EN 60068-2-6
- _ DIN EN 60068-2-27
- _ DIN EN 60068-2-64



Waterproof testing

Penetrating Water can cause considerable damage to electronic devices. This can result in malfunctions or even failure of the device. Waterproof tests according to ISO 20653 are designed to protect the functions of our sensors and actuators under exposure to condensation, rainwater, splash water and jets of water. The products are tested in our laboratory through temporary and permanent immersion in our own laboratory tank.

TR-Electronic – your partner in automation

Rotary encoders

Absolute encoder, incremental rotary encoder, wire-actuated encoder

Rotary encoders with optical and magnetic scanning function register the precise position in a wide variety of applications and industries. In medical engineering, miniature versions ensure correct positioning while SIL3-approved absolute rotary encoders provide the necessary safety. We offer not only high-quality rotary encoders (from Ø 22 to 160 mm) for almost any application but also comprehensive accessories.

Linear encoders

Linear absolute measuring systems, laser displacement measurement

Linear encoders register linear motions in machines, tools and systems according to specific requirements using different technologies. Linear encoders allow measuring distances of max. 20 m almost without any wear. This value is max. 240 m for laser measuring systems. Machines and systems can be precisely controlled to reach their desired positions.

Motion

Servo drives, compact drives, process drives

Intelligent encoTRive drives are available with the current field bus systems, such as PROFIBUS, PROFINET and CANopen, within a power range of up to 300 watts. The drives are configured to meet customer requirements and can be freely combined with precision gear, holding brake and I/O. Values of up to 4,350 rpm and powerful 200 Nm are available to cope with demanding applications.



Components

**Industrial PC, field bus I/O,
PLC, HMI controller**

Industrial PCs are available in numerous variants and offer customized calculation power for PC-assisted automation. Programmable logic controllers (PLC) are the traditional means for automation. HMI controllers establish the interface to the user. Field bus nodes, I/O modules and cam controllers complete the range of automation components.

Automation

**Consulting and implementation
for new machines and retrofit**

You want to set up a largely automated new machine or retrofit and modernize your existing machine with automation systems? Then you just need our extensive expert knowledge and the more than 20 years of our experience.

Unidor

**Blanking and forming,
systems, controls and sensors**

Trendsetting blanking and forming technology for more than 30 years. We are your reliable partner in the world of blanking and pressing and can prove this with thousands of machines which we have successfully installed all over the world. Sensors, controls and systems ensure optimal results in machines, tools and retrofit projects.

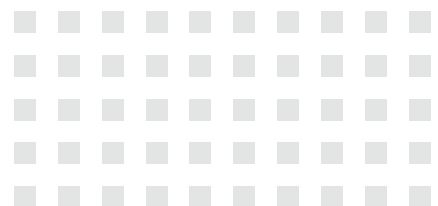


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Last update: 11/2016

68-105-122 - TR-V-PR-GB-0030

Subject to technology and design modifications.

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