

# Secure electronics despite **heat** and **cold**



Securo  
Tests | Trials

# Hot/cold function test

The right quality – safely



## Systems for functional testing of sensitive electronics

**Modern electronics are used nowadays in a range of industries and are therefore exposed to the most widely varied temperatures. Most notably, electronic assemblies in safety-related areas of application, such as medical technology, the automotive industry and aerospace technology, must function 100 % reliably at all temperatures.**

Safe testing and measuring methods are increasingly relevant and have already become standard in analysing the resistance of electronic components. In the aerospace industry, for example, the sun-facing side of a spacecraft can become extremely hot, as in the vacuum of space there is no air for cooling. However, since the temperature in space is minus 270 °C, the spacecraft is simultaneously exposed to extreme cold. Despite this high temperature, the technology must be completely reliable.

For such fields of application Rehm offers systems that can accurately simulate these extreme environmental conditions by selectively heating and/or cooling the assembly.



# Technical details

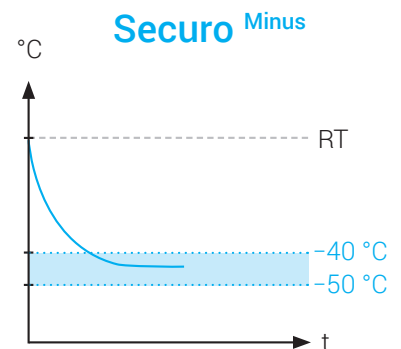
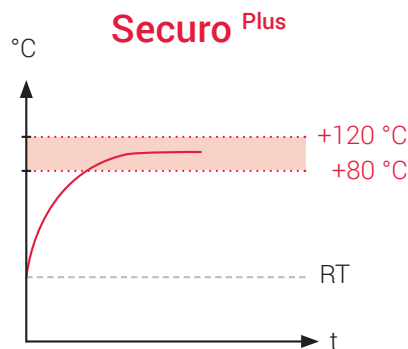
## Securo overview

Rehm Securo systems offer you complete flexibility and security in the design and implementation of your test tasks. A stable product carrier circulation ensures a safe journey through the system and total process stability. At the same time, Securo systems have enough intake capacity to reliably temper even large parts at the desired test temperature in a short cycle time.



### Temperature ranges

The Securo systems from Rehm are designed for a wide temperature range from  $-50\text{ }^{\circ}\text{C}$  to  $+120\text{ }^{\circ}\text{C}$ . As a result, a wide range of environmental conditions can be simulated. With the best insulation, these systems provide optimal heating or cooling of the components.



### Easy maintenance

Our hot and cold function test systems are easily accessible. The climate chamber is easily accessible due to a huge door. Thus, the process interior can be easily maintained. Our customers profit from minimal downtimes with low maintenance costs.





# Flexible system configurations

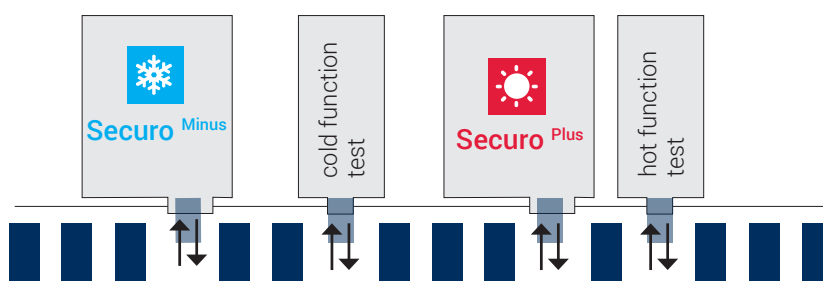
## can be integrated into any production environment

Flexibility characterises contemporary manufacturing. Our Securo series is modular and can be integrated into your production environment in-line or fully interlinked as a stand-alone application. With the in-line system and the stand-alone application, the heating and/or cooling and the testing are reliably carried out in multiple work steps.

whether you are planning a small and medium series with manual loading or wish to implement a large series with automatic part handling. A test system can thus be installed downstream, to allow the reliability of the warmed or cooled assembly to be checked immediately afterwards.

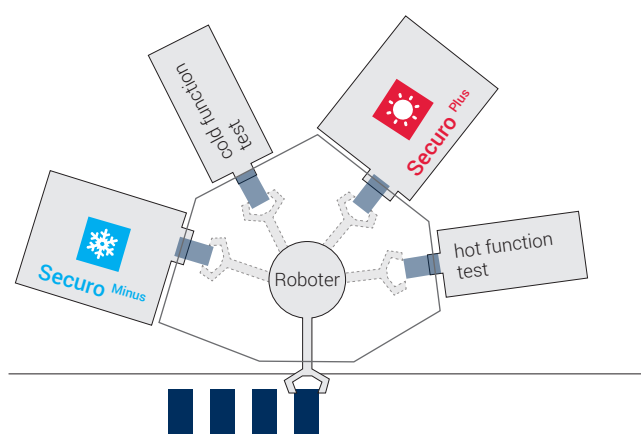
An interchangeable carrier system makes processing different assembly shapes and geometries easy, regardless of

### In-line



Production line with printed circuit boards

### Stand-alone application



Production line with printed circuit boards

# Safely at the right quality with Securo systems from Rehm

Testing and measuring methods are increasingly becoming standard in the automotive industry in particular to test the durability of the installed parts under real environment and increasing the service life of electronic components in the long term. Any failure or series fault is associated with high costs and far-reaching consequences.

Rehm Thermal Systems developed the Securo Plus system for the hot function test and Securo Minus for the cold function test. The systems operate in normal air or in nitrogen atmospheres.

To test the winter performance of sensitive electronics, functional modules are first cooled to temperatures of  $-50\text{ }^{\circ}\text{C}$ . However, to simulate the installation environment in a vehicle, the modules are heated up to  $+120\text{ }^{\circ}\text{C}$ .

The Securo systems are highly compatible with other measuring equipment. This allows extensive function monitoring and secure quality control. The best analysis and documentation tools provide for transparent processes.



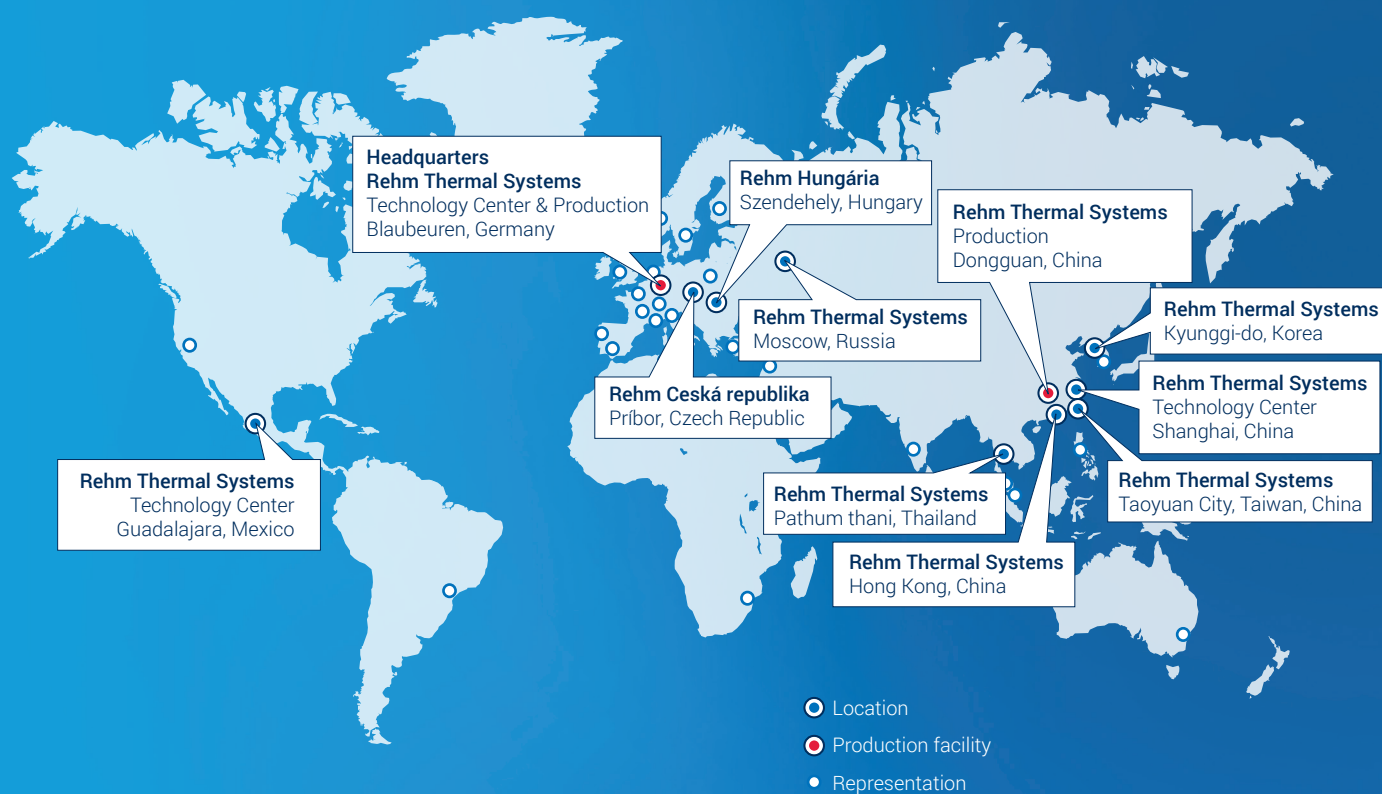
Securo Plus



Securo Minus



- › Analysis of resistance of sensitive electronics in extreme temperatures
- › Optimal combinations of systems with other measuring equipment
- › Excellent insulation values due to foamed housing
- › Excellent heating or cooling capacity
- › Easy access and minimal maintenance
- › Systems available as stand-alone or in-line variant



## Rehm Worldwide

As a leading manufacturer of innovative thermal system solutions, we have customers on every continent. With our own locations in Europe, the Americas and Asia as well as 27 agencies in 24 countries we are in position to serve the international markets quickly and to offer outstanding on-site service – worldwide and round the clock!

