

Experience liquid handling  
flexibility and productivity  
you can count on



Thermo Scientific TriPlus RSH Autosampler  
and Liquid Handling System

## Automatic tool change brings liquid handling and sample preparation to the next level



TriPlus RSH autosampler (RTC Version) for highest productivity and flexibility

Thermo Scientific™ TriPlus™ RSH Autosampler and Liquid Handling System with Robotic Tool Change (RTC) provides efficient automation of sample preparation steps. Robotic change of tools enables unattended 24/7 operations, even for multistep workflows. Pictured with the Thermo Scientific™ Orbitrap Exploris™ 120 MS and Thermo Scientific™ Vanquish™ LC pump.

## A robust, cost-effective autosampler solution for labs wanting to make a smaller investment



TriPlus RSH autosampler (RSI version) for robust, cost-effective operation

The Thermo Scientific TriPlus RSH Autosampler and Liquid Handling System (RSI version) is the robust, cost-effective solution for labs wanting to make a smaller investment. The TriPlus RSH Autosampler (RSI version) allows labs to automate single step processes such as liquid injections. Pictured with The Thermo Scientific™ TSQ Fortis™ Triple Quadrupole mass spectrometer and Thermo Scientific™ Vanquish™ LC pump.

### Process numerous samples quickly and reliably for LC-MS analysis

For pharmaceutical, contract research, food safety, environmental, clinical research and forensic laboratories that need to process a large number of samples quickly and reliably for LC-MS analysis, Thermo Fisher Scientific offers the TriPlus RSH autosamplers for Thermo Scientific™ LC-MS systems. The TriPlus RSH autosampler is the most widely used online sample preparation platform available today.

With dependable, flexible automation, and powerful software for customization, TriPlus RSH autosamplers substantially increase productivity. Many modules are available to accommodate a wide range of sample processing and application needs.

### Ultimate in dependable productivity

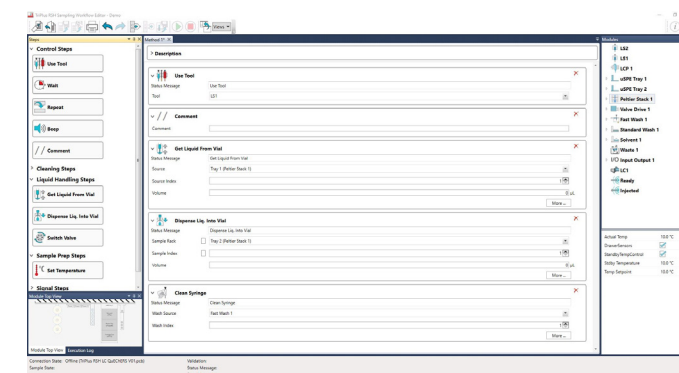
24/7 automation is one of the best ways to increase laboratory productivity. Transferring repetitive time-consuming manual tasks to a robotic platform improves productivity. When processes require different tools, the TriPlus RSH autosampler with Robotic Tool Change (RTC) brings liquid handling and sample preparation to the next level by incorporating automation. In addition, time-consuming steps can be overlapped or combined to increase sample.

The TriPlus RSH autosamplers feature flexible capacity, accepting sample trays and microtiter plates for a wide range of sample volumes. Included with the system is a temperature-controlled 3-drawer stack, you can load 420 x 1 mL, 324 x 2mL, or 90 x 10 mL vials, as well as other vial types and microtiter plates. Optionally a six-drawer stack (possible on autosamplers with standard X-axis only), a maximum capacity of 6912 samples can be loaded using 18 microtiter plates.

### Proven reliably and dependability

TriPlus RSH autosamplers have been well accepted and integrated with countless analytical systems worldwide, demonstrating reliable and dependable operation for a wide range of workflows. Laboratories often work under tremendous timelines and workload pressures. TriPlus RSH autosamplers provide worry-free performance you can count on, night and day.

To ensure process reliability, missing vials and injector positioning are tracked. Monitoring of the temperature-controlled stack ensures that the drawer is in the correct position and the temperature is logged.



Intuitive visual programming of your autosampler with TriPlus RSH Sampling Workflow Editor

### Eminently flexible

From simple liquid injection to complete workflows, TriPlus RSH systems can be adapted to meet almost any application need. Numerous options allow you to increase sample capacity or add modules, augmenting sample preparation capabilities.

### User friendly

Included with the system, the TriPlus Sample Control software interfaces seamlessly with Thermo Scientific™ Xcalibur™ and Thermo Scientific™ TraceFinder™ software. With a few clicks, you can import or generate sample lists and start data acquisition. Sample preparation methods can be created using drag and drop actions. Pre-developed methods can be used as-is, or easily optimized for specific applications using the optional Thermo Scientific TriPlus RSH Sampling Workflow Editor Software. Method building blocks make it easy to generate new methods, even for complex workflows.

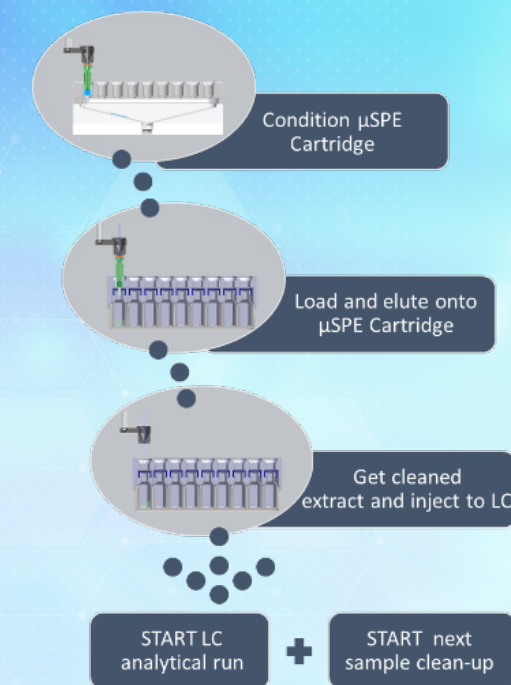
Visit: [www.thermofisher.com/SamplingWorkflowEditor](http://www.thermofisher.com/SamplingWorkflowEditor) to view the video demonstration.

## High-throughput online automated sample concentration HPLC solution for water and beverage analysis



TriPlus™ RSH EQuan 850 autosampler pictured with Orbitrap Exploris 120 mass spectrometer and Vanquish UHPLC pumps and column compartment

## Automate complex and time-consuming sample preparation workflows integrated with LC-MS analysis



### Ensure water and beverage safety

Exposure to pesticides, pharmaceuticals, personal care products, endocrine disruptors, and perfluorinated compounds in water is a significant health concern. The TriPlus RSH EQuan 850 autosampler provides a turn-key liquid chromatography-mass spectrometry (LC-MS) solution for the analysis of trace contaminants in environmental water, drinking water, and beverage samples. The TriPlus RSH EQuan 850 autosampler with Robotic Tool Change, enables the automation of many sample preparation steps, saving time and avoiding manual errors.

### Improve laboratory productivity and simplify method development

Laboratory productivity is significantly increased with the TriPlus RSH EQuan 850 LC-MS system which offers the possibility of standard injections and online sample pre-concentration procedures within the same batch without user intervention. Samples as large as 20 mL, or as low as 1  $\mu$ L, can be directly injected, saving valuable time. Rather than spending days on offline sample preparation, samples are loaded onto a TriPlus RSH EQuan 850 system, concentrated, and analyzed, yielding results in a fraction of the time, without the need to replumb or manually exchange syringe tools between experiments.

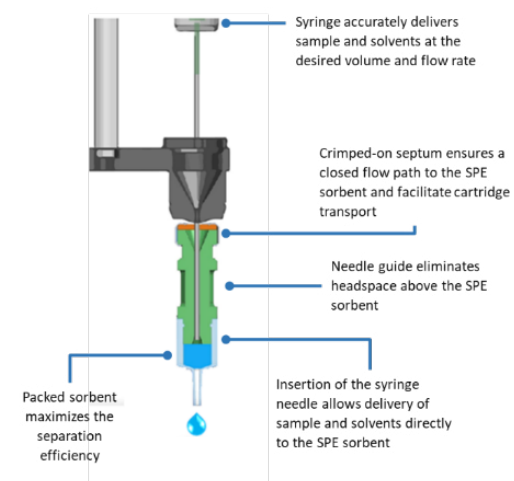
### Enable flexible and simple processes

The TriPlus RSH EQuan 850 LC-MS system provides exceptional flexibility. Based on the demands of the analyses, a system can be equipped with one of the Thermo Scientific™ TSQ™ Series II, Orbitrap™ Exploris™ Series or Orbitrap Tribid mass spectrometers. Regardless of the solution chosen, assay development is simple and fast. Data review is simplified with Thermo Scientific™ TraceFinder™ software. Inspect sample and reference mass spectra, evaluate peak integration, review different curve fits, and observe ion ratio values easily and interactively.



### Upgrade from manual time-consuming SPE to automated miniaturized cartridge-based $\mu$ SPE

The automation is the perfect solution to simplify routine working steps in analytical laboratories, eliminate human errors, obtain accurate and reproducible results, trace the data and improve laboratory efficiency. The TriPlus RSH  $\mu$ SPE Autosampler offers the automation of complex and time-consuming sample preparation workflows fully integrated with LC-MS analysis for simplicity, such as calibration dilutions, internal standard addition, and  $\mu$ SPE clean-up.



Unlike classical SPE using a vacuum manifold, the flow rate applied to the  $\mu$ SPE cartridge is precisely controlled with a liquid syringe on the TriPlus RSH  $\mu$ SPE autosampler, assuring optimum selectivity, recovery, accuracy, robustness and reproducibility.

The miniaturization of the sample clean-up step to a microliter scale solid-phase extraction prevents the typical dilution during manual SPE operations, thus, avoiding an additional evaporation step. The analytes are eluted only in a small volume of a few 100  $\mu$ L for direct injection into the LC-MS system.

### Enabling food safety with automated clean-up of QuEChERS extracts

The automated  $\mu$ SPE clean-up of QuEChERS extracts overlapped with chromatographic separation allows laboratories to maximize sample throughput operations for LC-MS analysis of multi-pesticide residues and veterinary drugs in a wide variety of food matrices, thus laboratory efficiency is greatly improved. Additionally, cleaner QuEChERS extracts improve matrix effects and provide extended uptime in routine environments.

# Dimensions and recommended configurations

Consult your Thermo Scientific representative for additional information about complete configurations.

System	Footprint	Recommended Configurations	Part Number
TriPlus RSH autosampler (RSI version, compact X-axis) (P/N 00950-01-00512) (adjustable table included)	Width: 600 mm (24.0 in) Depth: 795 mm (31.8 in) Height: 770 mm (30.8 in)	Vanquish base system Flex Vanquish Flex Binary Pump Column Compartment (optional) Set inline filter with 35 $\mu$ L mixer	VF-SO1-A-02 VF-P10-A-01 VH-C10-A-03
TriPlus RSH autosampler (RTC version, compact X-axis) (P/N 00950-01-00513) (adjustable table included)	Width: 600 mm (24.0 in) Depth: 795 mm (31.8 in) Height: 770 mm (30.8 in)	Vanquish base system Flex Vanquish Flex Binary Pump Column Compartment (optional) Set inline filter with 35 $\mu$ L mixer	VF-SO1-A-02 VF-P10-A-01 VH-C10-A-03
Base TriPlus RSH autosampler (RTC version, standard X-axis) (P/N C0950-01-00610) (adjustable table included)	Width: 915 mm (36.6 in) Depth: 795 mm (31.8 in) Height: 770 mm (30.8 in)	Vanquish base system Flex Vanquish Flex Binary Pump Column Compartment (optional) Set inline filter with 35 $\mu$ L mixer	VF-SO1-A-02 VF-P10-A-01 VH-C10-A-03
TriPlus RSH $\mu$ SPE autosampler (RTC version, standard X-axis) (P/N C0950-01-00611) (adjustable table included)	Width: 915 mm (36.6 in) Depth: 795 mm (31.8 in) Height: 770 mm (30.8 in)	Vanquish base system Flex Vanquish Flex Binary Pump Column Compartment (optional) Set inline filter with 35 $\mu$ L mixer	VF-SO1-A-02 VF-P10-A-01 VH-C10-A-03
TriPlus RSH EQuan 850 autosampler (RTC version, standard X-axis) (P/N C0950-01-00614) (adjustable table included)	Width: 915 mm (36.6 in) Depth: 795 mm (31.8 in) Height: Variable depending on the number of pumps configured	Vanquish base system Flex Vanquish Flex Binary Pump Vanquish Flex Quaternary pump Column Compartment (optional)	VF-SO1-A-02 VF-P10-A-01 VF-P20-A VH-C10-A-03



TriPlus RSH  $\mu$ SPE system pictured with Thermo Scientific™ TSQ Altis™ Triple Quadrupole mass spectrometer and Vanquish LC pump

Additional tools, modules may be purchased from CTC Analytics AG  
<https://www.ctc.ch>.

Find out more at [thermofisher.com/TriPlusautosampler](https://thermofisher.com/TriPlusautosampler)  
[thermofisher.com/TriPlusuSPE](https://thermofisher.com/TriPlusuSPE)  
[thermofisher.com/EQuan850](https://thermofisher.com/EQuan850)