Your Entire C/N/S/X Lab in One Device

multi EA 5100

Elemental Analysis

analytikjena

An Endress+Hauser Company

Meet the multi EA 5100!

The multi EA 5100 is your flexible all-round solution for sulfur, nitrogen, chlorine and carbon analysis in solids, liquids and gases. QC analysis, research and contract labs will benefit from its combination of outstanding robustness and sensitivity, plus quality, service and cost-effective 24/7 high-throughput analysis in every matrix.

Applications beyond expectations

- Extensive range of applications without device modification
- C/N/S/X in solid, liquid and gaseous samples plus TOC, AOX/TOX, EOX and EC/OC
- Vertical and horizontal combustion combined in one system
- Easy extension at any time

Simplified operation

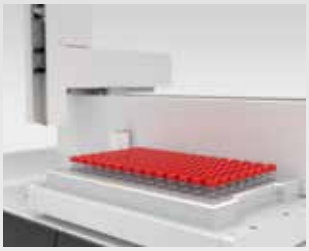
- System self-checks enable unattended operation and reliable results
- Extensive preset method library (ASTM, EPA, ISO, etc.)
- Auto-protection for cost reduction by predictive maintenance

Streamlined performance

- High sensitivity, fewer replicates – fast analyses, high throughput
- Eliminate extensive pretreatment
- Time and matrix-optimized analysis

One-stop service solutions

- Commissioning, training, maintenance and service contracts
- Broad range of tailor-made calibration solutions and electrolytes
- Online and on-site training courses



MMS with liquids rack

LPG 2.0 module

Accessories

ABD – automatic boat drive with cooled sample port
- Automatic introduction of liquid and solid samples
- Supports analysis of light volatile and reactive samples

MMS – Multi Matrix Sampler
- Automatic introduction of up to 112 liquid or 35 solid samples
- Vertical and horizontal operation mode
- Extendable for cooling or heating option

Autoinjector
- Safe injection of liquid samples up to 100 µL
- Ideal solution for small sample series

GSS module – Gas Sampling System
- Introduction of gaseous samples
- Doses of unpressurized or pressurized samples at variable dosage speeds

LPG 2.0 module
- For direct dosing of pressurized liquefied gases
- Fully automatic dosage, evaporation, and injection

GSS/LPG combi module
- For dosing of liquefied and pressurized gases
- Separate sample branches prevent cross-contamination

multi EA 5100

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Elevate Your Measurement Performance

Smart safety features and pre-configured methods simplify your analysis. Get unparalleled application variety in elemental analysis with the multi EA 5100.

Versatile and future-proof

The multi EA 5100 analyzes carbon, nitrogen, sulfur and chlorine in solids, liquids and gases **without** the need for **time-consuming device modification**. The device enables the determination of important environmental parameters (TOC/AOX/TOX/EOX). The modular design allows the system to be **adapted to individual requirements**. The base unit can be extended with additional detection modules at any time. In addition, a wide range of accessories is offered to boost analysis throughput or carry out gas/LPG analyses.

Vertical and horizontal combustion in one device

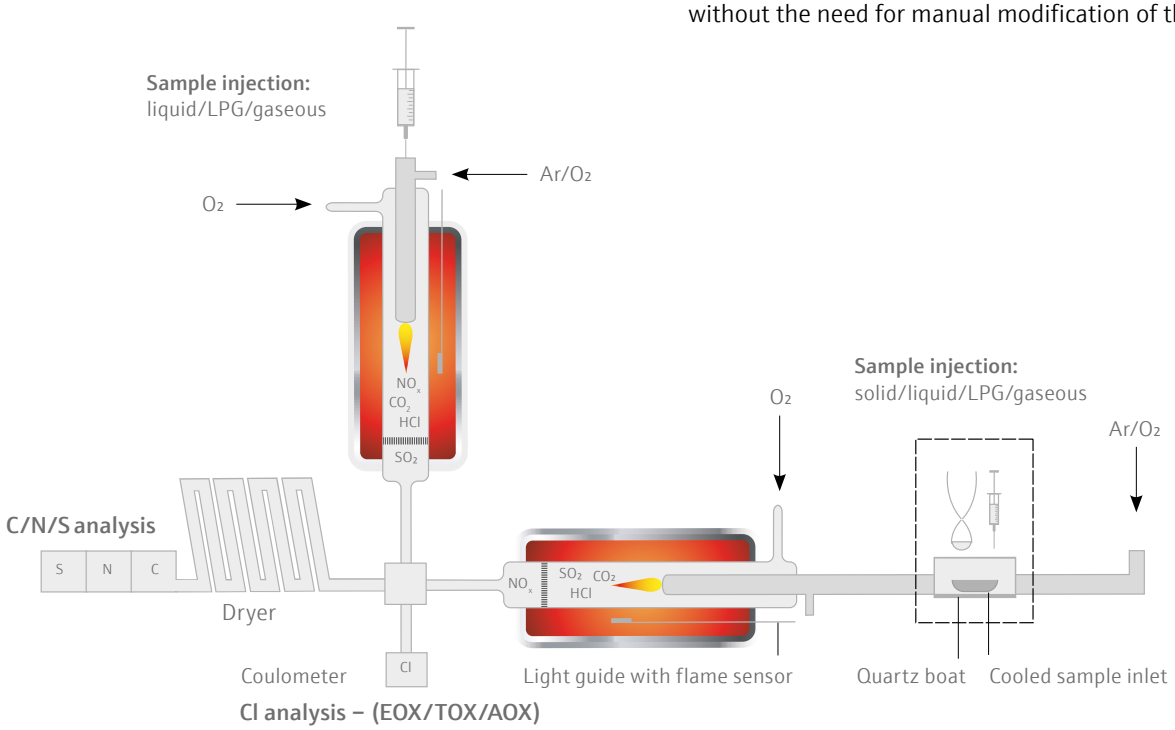
Benefit from double furnace technology and take advantage of both combustion methods to achieve the **best results for every sample matrix**. The **system will adapt to your sample** thanks to the easy-to-use tilting mechanism. The use of vertical systems has become standard for the fast, precise determination of liquids and gases, particularly in the trace range. However, as sample complexity, volatility and viscosity increase, it is necessary to use the horizontal mode.

Maximum operation safety guaranteed

The multi EA 5100 is equipped with a safety system that guarantees the long lifetime of the individual components. The integrated Self Check System automatically monitors and optimizes relevant system parameters, **guaranteeing a trouble-free** and **safe operation**. The auto-protection feature effectively protects the system from damage caused by particles, aerosols and liquids. The multi EA 5100 also offers **predictive maintenance**, which saves time on maintenance effort and prevents system failures.

Work efficiently with smart features

As part of the multiWin software, the multi EA 5100 contains an **extensive method library** with over 100 methods. This makes analyses according to international standards such as ASTM, EPA, DIN, ISO, and EN easy. Preconfigured methods eliminate time-consuming method development results in fast, correct measurements. C/N/S/X determination of multiple elements can be simply carried out in a **one time analysis cycle**. The changeover between C/N/S and Cl determination takes place automatically, without the need for manual modification of the analyzer.



Outstanding Analysis and Service Quality

The multi EA 5100 guarantees competitive advantage of your lab in terms of cost-effectiveness and analysis quality for years to come.

Increased uptime

Fast analysis is possible in three minutes for liquids and six minutes for solids. With a **high sample throughput** of over 160 liquid samples and up to 90 solid samples per day, costs are kept very low. Reduced consumption of consumables and less time spent on maintenance, minimize costs even further.

Optimal combustion for accurate measurements

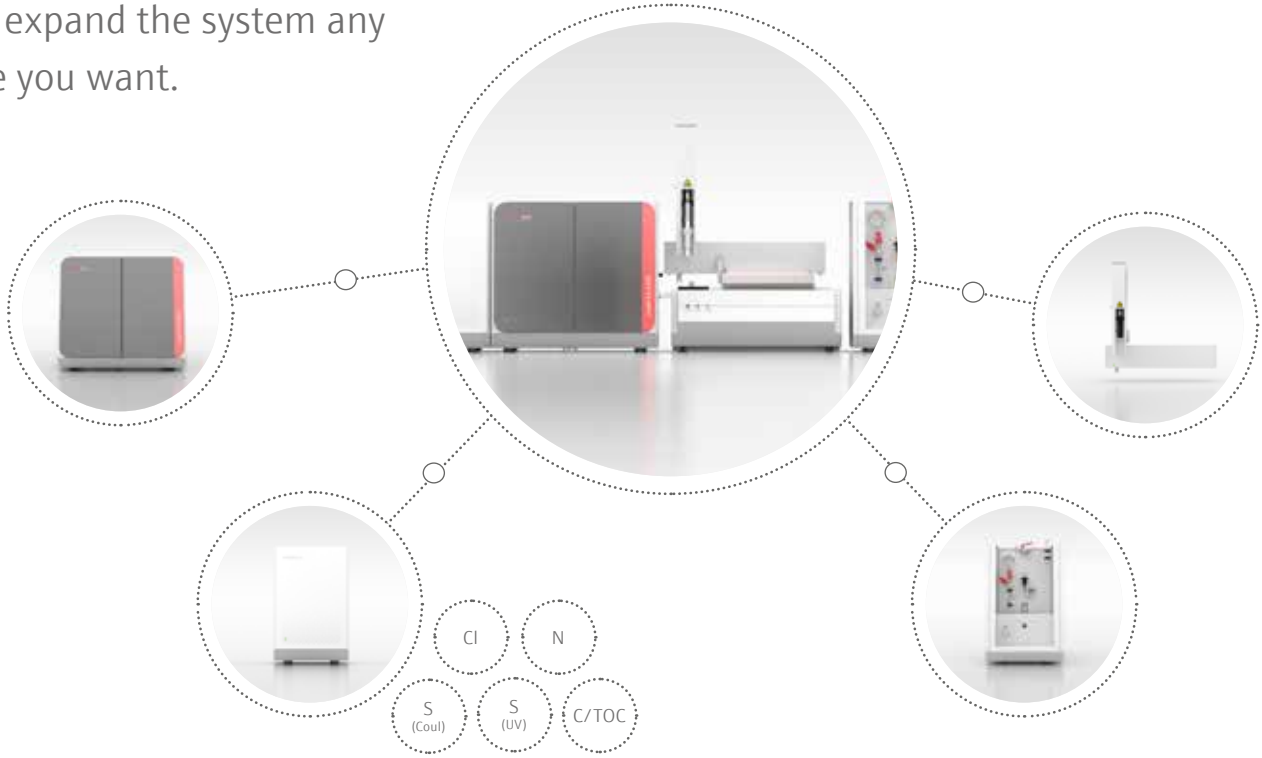
The integrated flame sensor guarantees **matrix-optimized**, **quantitative combustion** and **prevents soot formation**, thereby solving a problem common to other conventional instruments. With this technology, samples can be analyzed quickly and reliably, even if their characteristics are unknown.

Outstanding support throughout the product life cycle

We offer you **competent service** and **support** throughout the life cycle of your product. We provide system configuration tailored to your specific needs, instrument commissioning, and method development. You're also invited to take part in our comprehensive training, which includes on-site user seminars and workshops. Benefit from online training courses and a variety of tutorial videos which simplify analysis and device maintenance.
For direct **regional support**, our international network of experts is at your disposal. We also offer individual maintenance and service contracts.

Customize the Analyzer to Your Needs!

Mix and match the multi EA 5100 analysis modules to suit your needs – and expand the system any time you want.



Ready for a variety of applications

The unmatched detector diversity of sulfur, nitrogen, carbon and chlorine opens up a wide range of applications and offers the perfect solution for every elemental analysis. Individual detection systems can be combined and adpated as required.

Elements	**Carbon**	**Nitrogen**	**Sulfur**		**Chlorine**
Measuring principle	NDIR spectrometry	Chemiluminescence	UV fluorescence	Coulometry	Coulometry
Operation range[*1]	*relative:* 100 wt-% (organics) 10,000 mg/L (water) *absolute:* 500 mg C	*relative:* 10,000 mg/L *absolute:* 100 µg N	*relative:* 10,000 mg/L *absolute:* 100 µg S	*relative:* 40,000 mg/L *absolute:* 200 µg S	*relative:* 100,000 mg/L *absolute:* 1.00 mg Cl
Limit of detection[*1]	*relative:* 100 µg/lL (organics) 200 µg/L (water) *absolute:* 50 ng C (organics) 100 ng C (water)	*relative:* 10 µg/L *absolute:* 0.4 ng N	*relative:* 5 µg/L *absolute:* 0.2 ng S	*relative:* 600 µg/L *absolute:* 0.2 µg S	*relative:* 50 µg/L *absolute:* 10 ng Cl
Compliance[*1]	ISO 8245 // DIN EN 1484	ASTM D5762, D4629, D6069, D7184 // DIN 51444 // UOP 936, 971, 981	ASTM D5453, D6667, D7183, D7551 // DIN EN 15486, 20846, 17178 // UOP 987-Part A	ASTM D3120, D3246 // DIN EN ISO 16591	ASTM D5808, D4929-B, D7457 // EPA 9076, 9020-B // ISO 9562 // DIN 38418-17, 38414-18

[*1] depending on configuration, method settings, sample quantity, purity of the vessels, chemicals and gases used, and the qualification of the operator

Meeting Industry Needs

The versatility and smart features of the multi EA 5100 make it a universal talent that can be used in various fields, particularly in the oil and gas, petrochemical and chemical sector.

For the chemical, oil and gas industry and beyond

With its broad application spectrum and smart features, the multi EA 5100 is ideal for industrial control labs, contract labs and state authorities in the oil and gas, petrochemical and chemical industries. Applications include process control, material testing and waste management. Features such as flame sensor technology for matrix-optimized sample digestion – including most difficult matrices such as oils, VGO, polymers and liquefied gases – and the integrated method library are indispensable for easy routine analysis.

Oil & Gas

- Analysis of mineral oil, natural gas, process intermediats, fuels, heating oil, distillation residues, additives, biodiesel, bioethanol, etc.
- Analysis of lubricants, transmission and transformer oil, brake and hydraulic fluids, etc.

Chemicals & Materials

- Analysis of aromatic and aliphatic hydrocarbons
- Analysis of waxes, fatty acids, dyes, solvents such as alcohols, aldehydes, ketones, etc.
- Analysis of raw materials such as butane, propane and additives
- Analyses for certification to N/S/Cl standards, e.g. for the petrochemical industry
- Analysis of polymers (PP, PE, PC, caoutchouc)

Environment

- Determination of TOC/TOX/AOX/EOX in surface, cooling, process and waste waters
- TOX/AOX/EOX in soil, sewage sludge and sediments
- EC/OC for particulate diesel engine emissions for monitoring air quality

Food & Agriculture

- Carcinogenic Cl in fats, oils and waxes
- TN in sugar and starch
- N/S/Cl in alcohols, acetic and lactic acid

Power & Energy

- TS/TCl analysis of fuels such as coal, fuel oil, natural gas, derived fuels such as wood, straw etc.
- TOC/TOX/AOX in waste water

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