



# 930 Compact IC Flex

Compact ion  
chromatography  
system for  
routine analysis

**PEOPLE  
YOU  
CAN  
TRUST**

 **Metrohm**

# 930 Compact IC Flex: Entry-level model and working horse for routine analysis

The 930 Compact IC Flex is the Metrohm ion chromatograph for routine analysis developed with a focus on the requirements of contract laboratories and QC laboratories in all kinds of industries. Robust design, perfect ease of use and outstanding system reliability are key features of the 930 Compact IC Flex. Monitoring and control functions for system parameters, service intervals, calibrations, and results take the stress out of daily routine operation while ensuring high-quality measuring results.

## The 930 Compact IC Flex system – the highest degree of flexibility for your needs

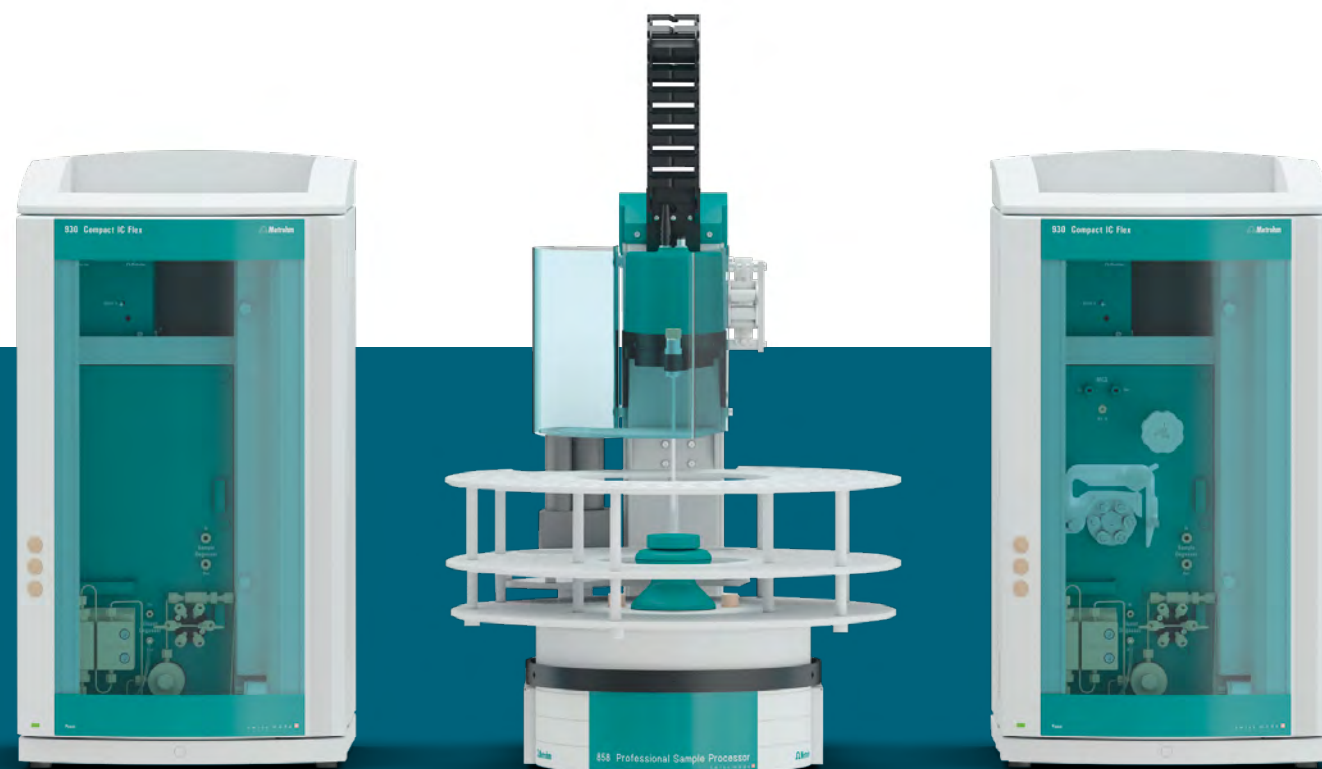
You can choose from a complete range of separation columns, suppressors, and detectors to configure

a customized solution for your specific analytical requirements. The 930 Compact IC Flex can also be fitted with a column oven as well as an eluent and sample degasser. The unique Metrohm Inline Sample Preparation («MISP») techniques are available enabling numerous options for automation. Additionally, efficiency and accuracy can be maximized by different options for automatic eluent generation. With the Metrohm microbore IC systems, you can make your ion chromatography even more sensitive and efficient.

## Customize your 930 Compact IC Flex system

Use our online configurator to select from various options and create a custom system to meet your needs.

The 930 Compact IC Flex online configurator allows you to put together your customized IC system for routine analysis in just a few steps. Combine up to 90 different instruments and accessory parts depending on the requirements of your application. Try it out:



## HIGHLIGHTS

- Compact system for routine analysis of anions, cations, and polar substances in the range of  $\mu\text{g/L}$  to  $\text{g/L}$
- Intelligent ion chromatography for superior reliability
- Modular kit of system components and accessories for custom system configuration
- Various types of detection: conductivity, UV/VIS, amperometry as well as mass spectrometers

- Small footprint and easily accessible system components
- STREAM – the green way of suppression
- Complete automation and unique Metrohm Inline Sample Preparation («MISP»)
- Upgradable for automatic eluent generation
- Complies with all GLP and FDA requirements
- Multi-language MagIC Net software for simple and intuitive operation
- Comprehensive monitoring- and control functions for high quality results



# Fully automated analyses for more work efficiency and analysis reliability



## AUTOMATION SAVES TIME AND MONEY

The 930 Compact IC Flex offers completely automated operation. There are six different autosamplers available in various configurations. The individual systems differ in their sample capacity, cooling options, liquid handling, and additional valve availability. You can always find the optimum automation to meet your requirements.



The 930 Compact IC Flex can be used to analyze gaseous, liquid, and solid samples. With the shown Combustion IC system halogens and sulfur in combustible samples, e.g., plastics, raw or end products in the petroleum industry, can be directly analyzed.

## INTELLIGENT INJECTION TECHNIQUES FOR AN EXTENDED WORKING RANGE

Apart from the full-loop and internal-loop injection, the 930 Compact IC Flex can also be combined with various intelligent injection techniques such as the «MiPT» (Metrohm intelligent Partial-Loop technique) and «MiPuT» (Metrohm intelligent Pick-up technique).



## ANION AND CATION DETERMINATION WITH JUST ONE AUTOSAMPLER

The 930 Compact IC Flex system allows simultaneous analysis of anions and cations down to the µg/L range. A setup of this kind is comprised of two Compact IC instruments sharing an autosampler. Together, they form a fully automated analysis system for processing sample series 24/7 determining a wide range of ionic components.



## METROHM INLINE SAMPLE PREPARATION («MISP»): MORE EFFICIENCY IN ROUTINE OPERATION AND NEW FIELDS OF APPLICATION

The Metrohm Inline Sample Preparation («MISP») techniques significantly expand the scope of applications for ion chromatography. Inline Ultra-filtration, Inline Dilution, Inline Dialysis or other techniques make even the most challenging samples manageable, such as suspensions or waste water samples that are loaded with proteins or extremely contaminated.



## HYPHENATION WITH SOPHISTICATED SAMPLING AND SAMPLE PREPARATION SYSTEMS AS WELL AS MASS SPECTROMETERS

The 930 Compact IC Flex can be used to extend the scope of ion chromatography by combination with sophisticated sampling systems such as the 2060 MARGA or MARS, straight forward sample preparation systems as Combustion Ion Chromatography (CIC) or hyphenation with mass spectrometers offering new and straightforward analytical possibilities.



# 930 Compact IC Flex – the ideal partner for routine analysis

## MAXIMUM RELIABILITY

The 930 Compact IC Flex excels by superior reliability. The system is self-monitoring:

- Immediate recognition of system components
- Automatic integration of instruments and instrument parameters into the software
- Permanent monitoring of system and method parameters
- Full traceability of results and single analysis steps

## WORKING CONTINUOUSLY WITHOUT MANUAL INTERVENTION

Combined with the 941 Eluent Production Module, the 930 Compact IC Flex integrates automated inline preparation of eluents of any composition and concentration. Hydroxide eluent generation is enabled with the 948 Continuous IC Module, CEP. With a connection to an ultrapure water system (e.g., ELGA® PURELAB® flex 5/6) both modules can run unattended 24/7. Automated inline eluent preparation ensures stable retention times, contamination-free working and saves manual working steps.

## PROFESSIONAL LIQUID HANDLING

A peristaltic pump and the 800 Dosino are available for transporting auxiliary solutions in sample preparation, for sample transfer, and for rinsing or regeneration procedures. The 930 Compact IC Flex can be operated entirely with the Dosino, for example using Dosino Regeneration. This reduces maintenance and increases the system reliability.

## PERFECT FLEXIBILITY FOR THE BEST APPLICATION SOLUTION

Each sample may require different sample preparation and/or analysis. The 930 Compact IC Flex offers a wide range of system components that can be selected to meet the particular purpose and requirements: with or without column oven, Dose-in Gradient, eluent and sample degasser, conductivity, UV/VIS or amperometric detection or different inline sample preparation options – the optimum solution is available with the 930 Compact IC Flex. Moreover the 930 Compact IC Flex can be operated with any separation column, regardless of the base material, particle size or dimensions.

## STREAM (SUPPRESSOR TREATMENT WITH REUSED ELUENT AFTER MEASURING) – THE GREEN WAY OF SUPPRESSION

Whether sequential, chemical or without any suppression: You have freedom of choice with the 930 Compact IC Flex. The suitable rotor is selected depending on the application and the column dimensions: «MSM-HC», «MSM» or «MSM-LC». Due to their robust design, Metrohm grants a 10-year-manufacturer's warranty on all anion suppressor rotors.

All 930 Compact IC Flex versions with suppression are equipped with STREAM. Go the green way of suppression with the STREAM setup. The suppressed eluent is used for rinsing of the regenerated suppressor after the detection. This means no additional rinsing medium is necessary. Furthermore, STREAM enables nonstop system operation for at least two weeks – or even longer than with inline preparation of the regenerant. This reduces manual working steps, maintenance, and helps to cut running costs.



## MAGIC NET – USER-FRIENDLY SOFTWARE

The instruments of the 930 Compact IC Flex series are controlled by the proven MagIC Net ion chromatography software. Freely configurable user windows and graphic symbols for the individual system components make the software simple and intuitive to use. MagIC Net is available in no fewer than 16 languages!

## RELIABLE RESULTS – AUTOMATICALLY!

A wide range of monitoring and control functions ensure highest reliability – of both the system itself and the quality of the results produced. Be it the number of injections on a separation column, a parameter exceeding defined tolerance limits for results or checking the calibration with a check standard – the 930 Compact IC Flex provides complete information. That's not all: If required, the system intervenes and takes action automatically. For example, automatic recalibration if the check standard is outside the defined limits.

# Automatic eluent production for highest efficiency and accuracy

Use the 930 Compact IC Flex systems with the 948 Continuous IC Module, CEP for automatic hydroxide eluent production to maximize your laboratory efficiency.

No matter if isocratic or gradient-elution is required, this automated, almost reagent-free solution helps you to increase efficiency and accuracy.

Hydroxide eluent generation (LiOH, NaOH, or KOH) with the 948 Continuous IC Module, CEP guaran-

tees ultra-low noise to achieve lowest detection limits and provides an outstanding linearity. It is the most sustainable solution for eluent production as the consumption of chemicals is reduced, concentrates can be refilled, and the equipment can be used multiple times.

With the 941 Eluent Production Module, Metrohm integrates a highly flexible Inline Eluent Preparation solution in the ion chromatographs of the 930 Compact IC Flex systems.

Each application has its own ideal eluent, be it a combination of different salts or the addition of organic solvents. Thanks to Inline Dilution and the patented Dosino technology, the 941 Eluent Production Module can be used to produce any eluent from concentrates purchased or produced by yourself. Up to four eluents can be produced in parallel with just one module.

Automated Inline Eluent Preparation ensures stable retention times, contamination-free working, and reliable measurement results.

Continuous, maintenance-free operation is possible for up to one month, making this solution highly affordable.





# 930 Compact IC Flex microbore ion chromatography systems

**2-millimeter columns, microbore capillaries, and a new detector with reduced cell volume are at the heart of the Metrohm microbore ion chromatography systems.**

Microbore capillaries guarantee a precise eluent flow, resulting in outstanding stability for applications with isocratic or gradient elution. In combination with our microbore columns and their reduced flow rates, eluent savings of up to 75% compared to 4-mm standard bore IC are possible. Signal sensitivity can be increased by up to 20% with microbore IC.

The new microbore detector tolerates even challenging eluents such as methanesulfonic acid (MSA). With its outstanding features the Metrohm microbore IC systems qualify for new application fields and are ideally suited for hyphenation with high-end mass spectrometers.

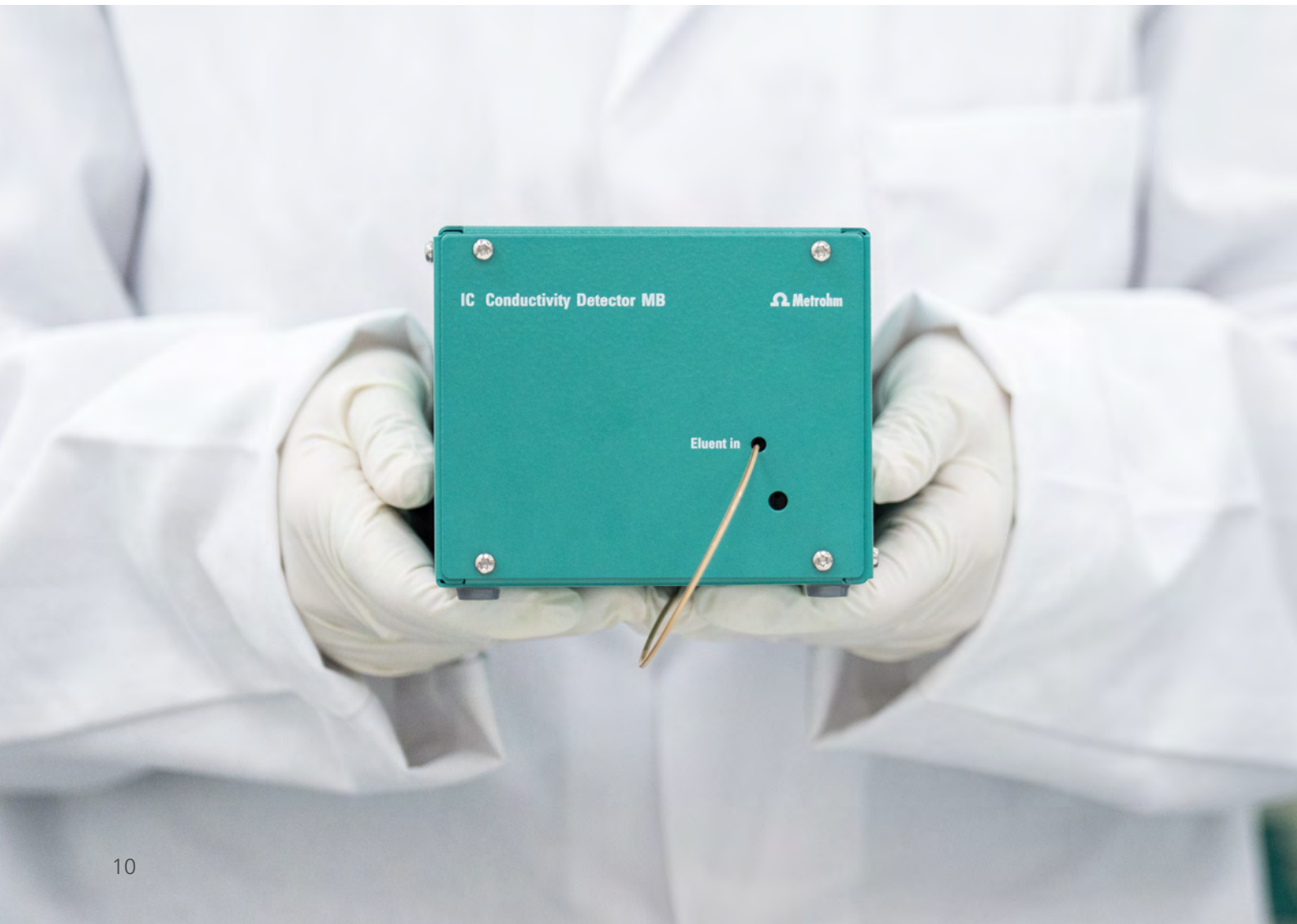
# MagIC Net – the ion chromatography software

The instruments in the 930 Compact IC Flex series are controlled by the proven MagIC Net ion chromatography software. MagIC Net also controls any peripheral devices for Liquid Handling and automation. MagIC Net records the results produced, enables modern data management and reporting as required by the user.

MagIC Net is easy to command. The user interface can be freely configured and adapted to the needs of the user. Thus, only those windows are visible that are actually needed; the kind and scope of information in these windows can, in turn, be defined as required by the user. If required, system command can be simplified to a single click on

the start or stop button on the screen! As MagIC Net is available in 16 languages, linguistic misunderstandings and resulting errors by the operator are virtually ruled out.

MagIC Net provides self-monitoring of the system and ensures that any results produced are checked automatically. Thus, the software makes logical decisions and takes action by itself, if required. A good example would be the determination of the optimum dilution factor: If the concentration of the analyte is outside the calibrated range, then the system automatically calculates the required dilution factor and initiates dilution of the sample, ensuring that any results produced are always reliable.



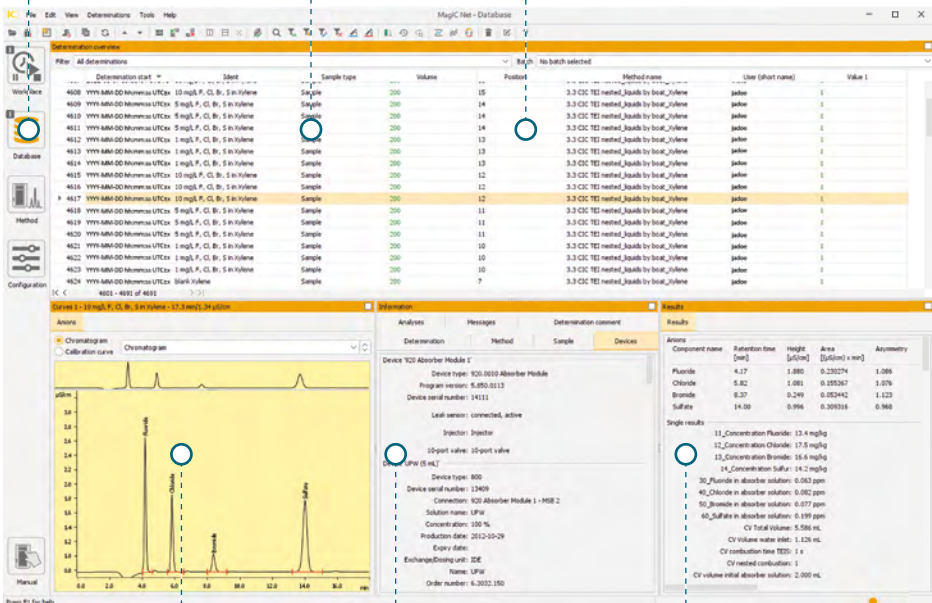
Easy navigation between workplace, database, method, configuration, and manual control

Convenient data handling

User-defined window and view settings



Easy system configuration and intelligent hardware components



Graphical display of chromatograms and calibration curves

Full traceability of results

Quick and easy overview of results, statistics and monitored parameters



# Technical information

General	<ul style="list-style-type: none"><li>– Compact IC system with modular design</li><li>– Intelligent system components</li><li>– Combination with various detectors possible</li><li>– Metal-free flow path with operation pressure range of 0–35 MPa</li><li>– Microbore systems for increased efficiency available</li><li>– 3-year warranty</li></ul>	
	Intelligent technology is integrated in the following system components, among others: iPump / iDetector / iColumn / 800 Dosino	
Eluent and sample degasser	Organic modifier Material	0–100% (no PFC [perfluorocarbons]) fluoropolymer
High-pressure pump	Serial dual-piston pump with two valves and flow range-optimized, intelligent pump heads Flow rate 0.001–20 mL/min	
Injection valve	Injection volume	
	Internal loops Sample loops	0.25, 1 µL 1.5, 5, 10, 20, 50, 100, 250, 1'000 µL
Column oven	Temperature range	0...+80 °C (ambient temperature +5...+40 °C)
	Stability	<0.05 °C
Suppressors	MSM, MSM-HC and MSM-LC Metrohm Suppressor Modules for chemical suppression	
	Type	«Micro Packed Bed» suppressor
	Regeneration	STREAM with peristaltic pump or 800 Dosino
	Organic modifier	0–100%
	Warranty	10 years on all anion suppressor rotors
	MSM-HC Rotor A, Hydroxide for hydroxide eluents	
	Type	«Micro Packed Bed» suppressor
	Regeneration	STREAM with peristaltic pump or 800 Dosino
	Organic modifier	0–100%
	MCS Metrohm CO <sub>2</sub> Suppressor	
	Type	CO <sub>2</sub> removal with fluoropolymer technology
	Organic modifier	0–100% (no PFC [perfluorocarbons])
Detectors	Options for integration in the system include:	
	<ul style="list-style-type: none"><li>– Conductivity detection</li><li>– UV/VIS detection</li><li>– Amperometric detection</li></ul>	
Conductivity detector	Intelligent high-performance conductivity detector	
	Measuring principle	DSP – «Digital Signal Processing»
	Measuring range	0–15'000 µS/cm – without range switching
	Cell temperature	20–50 °C in 5 °C increments
	Temperature constancy	<0.001 °C
	Cell volume	0.8 µL
	Cell constant	Individual calibration data saved in the detector, adjustable in the range: 13.0–21.0/cm
	Electrodes	Ring-shaped electrodes made from stainless steel
	Electronic noise	<0.1 nS/cm (at 1 µS/cm)
	Baseline noise	<0.2 nS/cm (e.g., A Supp 5, standard conditions)
	Max. operating pressure	5 MPa

Conductivity detector MB	Intelligent high-performance microbore conductivity detector compatible with MSA	
	Measuring principle	DSP – «Digital Signal Processing»
	Measuring range	0–15000 µS/cm – without range switching
	Cell temperature	20–50 °C in 5 °C increments
	Temperature constancy	< 0.001 °C
	Cell volume	0.3 µL
	Cell constant	Individual calibration data saved in the detector, adjustable in the range: 13.0–21.0 /cm
	Electrodes	Ring-shaped electrodes made of stainless steel compatible with MSA
	Electronic noise	< 0.1 nS (at 1 µS/cm)
Peristaltic pumps	Baseline noise	< 0.2 nS/cm (typical for sequential suppression)
	Max. operating pressure	10.0 MPa
	Capillaries	ID 0.18 mm
Gradients	Dose-in Gradient	binary, ternary, quaternary, quinary step or linear progression
	Hydroxide gradient	948 Continuous IC Module, CEP linear, convex, or concave progression
Automation	Combinable autosamplers: 858 Professional Sample Processor, 919 IC Autosampler plus, 863 Compact IC Autosampler, 889 IC Sample Center, 814 USB Sample Processor, 815 Robotic USB Sample Processor XL	
Metrohm Inline Sample Preparation «MISP»	Options for integration in the system include:	
	<ul style="list-style-type: none"><li>– Inline Ultrafiltration</li><li>– Inline Dialysis</li><li>– Inline Matrix Elimination</li><li>– Inline Dilution</li><li>– Inline Extraction</li></ul>	
Metrohm injection techniques	Every 930 Compact IC Flex is pre-installed with full-loop injection; options for integration in the system include:	
	<ul style="list-style-type: none"><li>– Internal-loop injection</li><li>– Metrohm intelligent Partial-Loop Injection Technique «MiPT»</li><li>– Metrohm intelligent Pick-up Injection Technique «MiPuT»</li></ul>	
Control	MagIC Net Compact, Professional, and Multi	



# Ordering Information



930 Compact IC Flex instruments	
2.930.1100	930 Compact IC Flex
2.930.1160	930 Compact IC Flex Deg
2.930.1200	930 Compact IC Flex ChS
2.930.1260	930 Compact IC Flex ChS/Deg
2.930.1300	930 Compact IC Flex ChS/PP
2.930.1360	930 Compact IC Flex ChS/PP/Deg
2.930.1400	930 Compact IC Flex SeS
2.930.1460	930 Compact IC Flex SeS/Deg
2.930.1500	930 Compact IC Flex SeS/PP
2.930.1560	930 Compact IC Flex SeS/PP/Deg
2.930.2100	930 Compact IC Flex Oven
2.930.2160	930 Compact IC Flex Oven/Deg
2.930.2200	930 Compact IC Flex Oven ChS
2.930.2260	930 Compact IC Flex Oven/ChS/Deg
2.930.2300	930 Compact IC Flex Oven ChS/PP
2.930.2360	930 Compact IC Flex Oven ChS/PP/Deg
2.930.2400	930 Compact IC Flex Oven SeS
2.930.2460	930 Compact IC Flex Oven/SeS/Deg
2.930.2500	930 Compact IC Flex Oven SeS/PP
2.930.2560	930 Compact IC Flex Oven SeS/PP/Deg



Microbore IC systems	
2.930.2180	930 Compact IC Flex Oven/Deg/MB
2.930.2580	930 Compact IC Flex Oven/SeS/PP/Deg/MB
Microbore Upgrade kits	
6.05802.000	MB retrofit kit Upgrade for systems with or without chemical suppression.
6.05802.010	MB retrofit kit, SES Upgrade for systems with sequential suppression.
Detection	
2.850.9010	IC Conductivity Detector
2.850.9020	IC Conductivity Detector MB
2.850.9110	IC Amperometric Detector
2.947.0010	947 Professional UV/VIS Detector Vario SW
2.947.0020	947 Professional UV/VIS Detector Vario MW
2.945.0010	945 Professional Detector Vario – Conductivity
2.945.0020	945 Professional Detector Vario – Amperometry
2.945.0030	945 Professional Detector Vario – Conductivity & Amperometry
MagIC Net software	
6.6059.4x1	MagIC Net 4.x Compact: 1 licence
6.6059.4x2	MagIC Net 4.x Professional: 1 licence
6.6059.4x3	MagIC Net 4.x Multi: 3 licences



Automation	
2.814.0130	814 USB Sample Processor – 2T
2.815.0130	815 Robotic USB Sample Processor XL – 2T
2.858.0010	858 Professional Sample Processor
2.858.0020	858 Professional Sample Processor – Pump
2.858.0030	858 Professional Sample Processor – Pump – Injector
2.863.0010	863 Compact IC Autosampler
2.889.0010	889 IC Sample Center with injector and syringe including sample racks and sample vials
2.889.0020	889 IC Sample Center with injector, syringe and cooling function including sample racks and sample vials
2.889.0030	889 IC Sample Center including sample racks and sample vials
2.889.0040	889 IC Sample Center with cooling function including sample racks and sample vials
2.919.0020	919 IC Autosampler plus
858 Professional Sample Processor – selection of accessories	
6.2041.440	Standard rack 148 × 11 mL + 3 × 300 mL
6.2041.760	Rack 54 × 11 mL + 1 × 300 mL
6.2041.770	Sample rack 211 x 11 mL
6.2041.780	Sample rack 65 x 11 mL + 25 x 50 mL
6.2041.480	Rack 159 × 2 mL + 3 × 300 mL
6.2743.050	PP sample vessels (11 mL); 2'000 units
6.2743.040	PP sample vessels (2.5 mL); 2'000 units
6.2743.070	PP stopper with perforation, for sealing the sample vessels; 2'000 units
6.5330.130	IC Equipment: Liquid Handling Station, left

Liquid Handling	
2.741.0010	741 Magnetic Stirrer
2.800.0010	800 Dosino
6.1580.120	807 Dosing Unit 2 mL
6.1580.150	807 Dosing Unit 5 mL
6.1580.210	807 Dosing Unit 10 mL
6.1580.220	807 Dosing Unit 20 mL
6.1580.250	807 Dosing Unit 50 mL
6.3033.150	Dosing Unit PCR 5 mL
6.5330.100	IC equipment: Inline Dialysis
6.5330.200	IC equipment: Low Volume Inline Dialysis
6.05330.010	IC equipment: Inline Ultrafiltration 2 – pull mode
6.05330.110	IC equipment: Inline Ultrafiltration 2 – push mode
6.05330.210	IC equipment: Inline Ultrafiltration 2 – MiPT
6.5330.120	IC Equipment: Inline Dilution
6.5330.150	IC Equipment: Dose-in Gradient
6.5330.170	IC Equipment: MiPuT
6.5330.180	IC Equipment: MiPT
6.5330.190	IC Equipment: Dosino Regeneration
6.5904.050	Injector with 4-port stator and 0.25 µL rotor
6.9959.001	Injector with 4-port stator and 1.0 µL rotor

Automatic eluent production	
2.948.0010	948 Continuous IC Module, CEP
2.941.0010	941 Eluent Production Module
6.5330.090	IC Equipment: Additional Eluent on the Eluent Production Module
Suppressor rotors	
6.2832.000	MSM Rotor A
6.2842.000	MSM-HC Rotor A
6.2842.200	MSM-HC Rotor C
6.2844.000	MSM-LC Rotor A
6.2842.100	MSM-HC Rotor A, Hydroxide
6.2842.020	Adapter sleeve for Suppressor Vario (always required if 6.2832.000 or 6.2844.000 is used)





