

# Metrohm meets Empower 3



Ion chromatography with the  
Chromatography Data Software (CDS) from Waters



# Leading chromatography data software now also for IC

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Waters™ is the world's leading specialty measurement company and manufacturer of systems for high-performance and ultra-high-performance liquid chromatography. With Empower™ 3 Software, Waters also provides the most popular and widely used chromatography data software (CDS). Metrohm ion chromatographs can now also be controlled by Empower 3 Software, enabling the comfortable analysis of anions and cations in almost any matrix.

In addition to the standard IC systems with conductivity detection, the available driver integrates the amperometric and the UV/VIS detector as well as various autosamplers and sample preparation techniques from Metrohm into Empower. Examples of this are Inline Ultrafiltration and Inline Dilution. Also integrated is the 889 IC Sample Center, an autosampler, which enables the cooling of temperature-sensitive biochemical samples.

The screenshot displays the Waters Empower 3 Software interface. The main window shows a table of sample runs with columns for Vial, Inj Vol (µL), # of Inj, Label, SampleName, Level, Function, Method Set / Report Method, Label Reference, Processing, Run Time (Minutes), and Data Start (Minutes). The table lists 12 runs, including standards and samples like 'UPW', '5 ppm Cations/Sugars', '10 ppm Cations/Sugars', '20 ppm Cations/Sugars', 'Tap Hériveau', and 'Apple Juice 1\_100'. Below the table, there is a 'Status' panel with 'Manual Control' and 'Instrument Status' set to 'IDLE'. The 'Instrument Status' panel shows various parameters: Pump Flow (ml/min) at 0.500 and 0.900, Pump Press. (bar) at 78.4 and 71.0, Injector at INJECT, Degasser at BUSY, MCS at READY, MSM Last Step (Min) at 21461.4, Column Heater (°C) at 29.9, Cond. Detector (µS/cm) at 1935.396, Cell Status at ON, Current (nA) at 854.764, and Potential (V) at 0.050. To the right, the 'Instrument Method' is set to 'Sugars\_Cations\_1' with 'Edit', 'Monitor', and 'Setup' buttons.

Vial	Inj Vol (µL)	# of Inj	Label	SampleName	Level	Function	Method Set / Report Method	Label Reference	Processing	Run Time (Minutes)	Data Start (Minutes)
1	5	20.0	1	UPW		Inject Samples	Sugars_Cations_1_msetset		Normal	20.00	0.00
2	7	20.0	1	5 ppm Cations/Sugars	1	Inject Standards	Sugars_Cations_1_msetset		Normal	20.00	0.00
3	7	20.0	1	5 ppm Cations/Sugars	1	Inject Standards	Sugars_Cations_1_msetset		Normal	20.00	0.00
4	9	20.0	1	10 ppm Cations/Sugars	2	Inject Standards	Sugars_Cations_1_msetset		Normal	20.00	0.00
5	9	20.0	1	10 ppm Cations/Sugars	2	Inject Standards	Sugars_Cations_1_msetset		Normal	20.00	0.00
6	11	20.0	1	20 ppm Cations/Sugars	3	Inject Standards	Sugars_Cations_1_msetset		Normal	20.00	0.00
7	11	20.0	1	20 ppm Cations/Sugars	3	Inject Standards	Sugars_Cations_1_msetset		Normal	20.00	0.00
8	12	20.0	1	Tap Hériveau		Inject Samples	Sugars_Cations_1_msetset		Normal	20.00	0.00
9	12	20.0	1	Tap Hériveau		Inject Samples	Sugars_Cations_1_msetset		Normal	20.00	0.00
10	14	20.0	1	Apple Juice 1_100		Inject Samples	Sugars_Cations_1_msetset		Normal	20.00	0.00
11	14	20.0	1	Apple Juice 1_100		Inject Samples	Sugars_Cations_1_msetset		Normal	20.00	0.00
12	15	20.0	1	Apple Juice 1_100		Inject Samples	Sugars_Cations_1_msetset		Normal	20.00	0.00

All system components are controlled and monitored by Empower 3 Software.

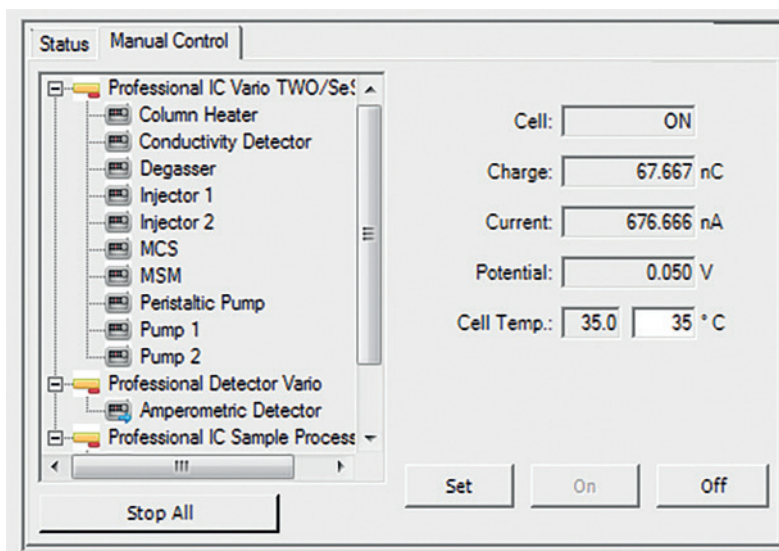
## The advantages

- One software for all chromatographic applications
- One software for all hyphenated techniques (IC-ICP/MS, IC-MS)
- Reduced training and software revalidation effort
- All data in one database

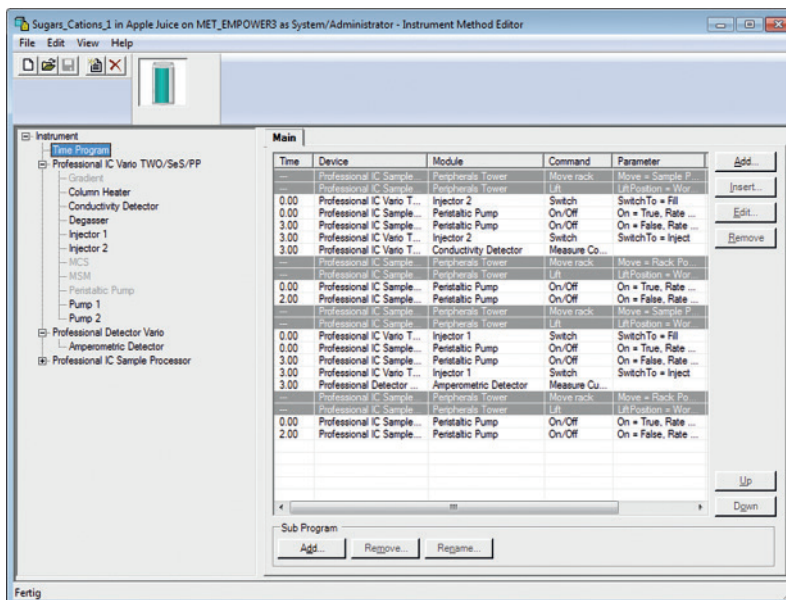
# One software for everything

With complete integration of the Metrohm IC systems by the relevant drivers, all system components can be programmed, controlled, and monitored with Empower.

For example, the «Instrument Method» field can be used to set the relevant parameters and to create flexible time programs and subprograms to map a wide variety of control sequences.



Screenshots (above and below): Instrument method and its possibilities



In addition, different instruments can be combined in the same method and, for instance, a Metrohm ion chromatography system can be operated together with a SQ Detector 2 mass spectrometer from Waters.

As the system is controlled completely via Empower, the data acquisition, evaluation, and reporting are also performed in the familiar Empower environment. The requirements of the FDA for the application of software in a regulated area 21 CFR Part 11 are fully met too. Empower 3 Software ensures integrity and traceability for all data and results.

## Ordering information

6.6070.210 Metrohm IC Driver 2.1 for Empower 3  
6.6070.921 Upgrade Metrohm IC Driver 2.1 for Empower 3

[www.metrohm.com](http://www.metrohm.com)