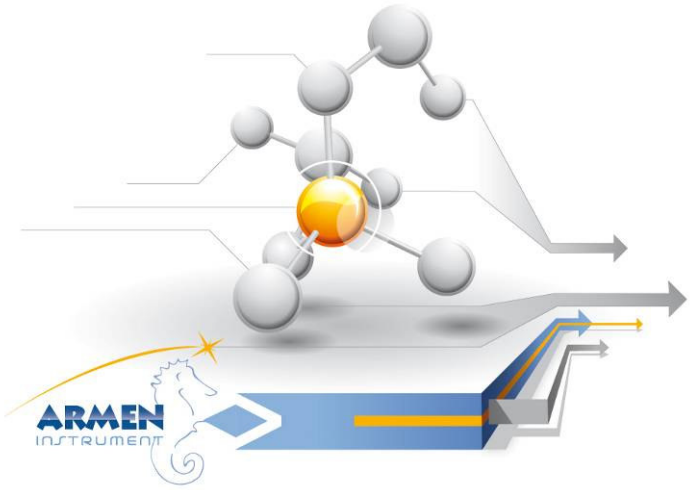
ARMEN SKID LC SYSTEM



Custom solution for preparative and industrial HPLC

Armen Instrument : ZI de Kermelin - 16, rue Ampère - 56890 St-Avé - France
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Example of Armen Skid LC system

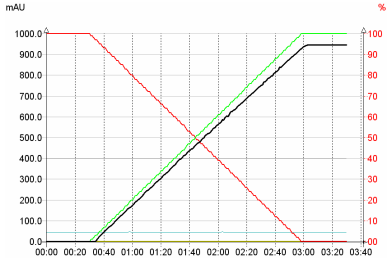
AP-HPG2-500-125-SKID

Configuration

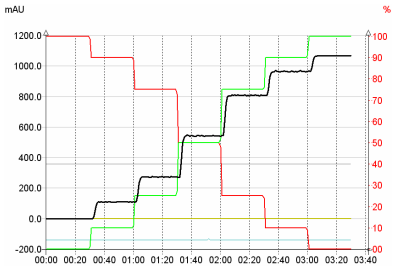
- Binary High Pressure gradient pump, 500 ml/min, 125 bar max
- Manual injector with loop
- Injection through pump unit
- Fraction collector 20 ways and 1 waste
- Priming valve
- Back flush valve unit
- Recycling valve unit
- UV/VIS with prep cell
- RI detector
- Armen Glider Prep software
- Computer 17" flat screen.
- Power supply cabinet including components

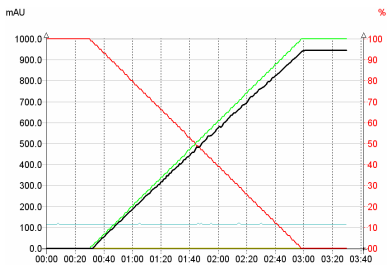
Specifications/Performances

- Flow rate range :1 to 500 mL/min
- Flow rate performance : 1% accuracy (with H^2O degassed at 20°C),
- Repeatability better than 0.5%.
- Gradient former : Linear response from 0.5 to 99.5%
- System protection : Pressures Min and Max adjustable, Software
- Control : via PC & software
- Dimensions : (Width x Height x Depth -in millimetres- without connections)
- Trolley : 1270 x 1281 x 950
- Weight : 250 kg
- Temperature : 5°C to 40°C

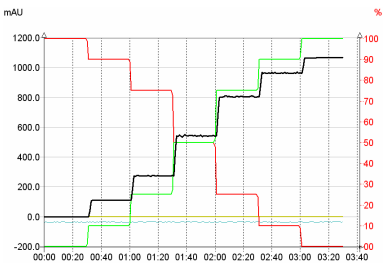


Linear and step gradient at 200 mL/min





Linear and step gradient at 500 mL/min



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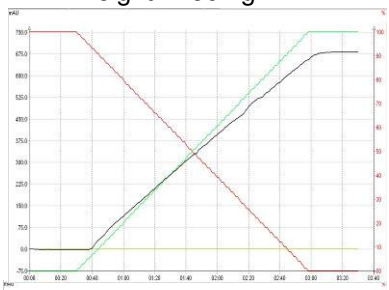
AP-HPG2-TRIX-5000-70-SKID

Configuration

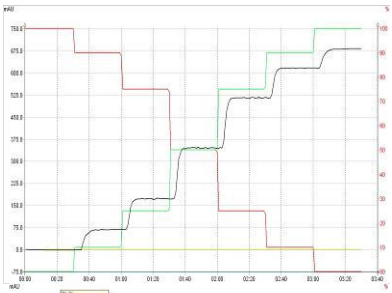
- AP-HPG2 binary High Pressure gradient pump, 5000 ml/min, 70 bar max
- Priming valve
- Injection through pump unit
- Fraction collector 4 ways and 1 waste
- Back flush valve unit
- Recycling valve unit
- UV/VIS with prep cell
- Armen Glider Prep software
- Computer 17" flat screen. Soft installed and tested.
- Power supply cabinet including components
- Flow rate range :

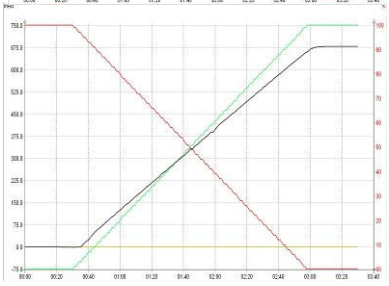
Specifications/Performances

- Flow rate range : 10 to 5 000 mL/min
- Flow rate performance : 1% accuracy (with H^2O degassed at 20°C),
- Repeatability better than 0.5%.
- Gradient former : Linear response from 0.5 to 99.5%
- System protection : Pressures Min and Max adjustable, Software
- Control : via PC & software
- AC mains supply voltage : 220/240V – 20A max - 50 Hz
- Dimensions : (Width x Height x Depth -in millimetres- without connections)
- Trolley : 1270 x 1281 x 950
- Weight : 250 kg

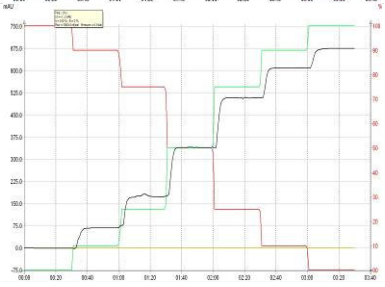


Linear and step gradient at 2000 mL/min





Linear and step gradient at 5000 mL/min



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Custom system on request :

Armen SKID LC systems could be set up according to your needs and application. Large range of pumping system are available from 500 mL/min to 15 L/min, isocratic, low pressure or high pressure gradient and all kind of detectors, fraction collectors and hydraulic valves could be installed. All those peripherals are installing in one box and controlled through our dedicated Armen Glider Software for GMP compliance and convenient purification.
Design your system by indicated which peripherals you would like for a quote.

Pumping system :

AP-TRIX range : Isocratic or low pressure gradient mixing

500 mL/min pump - 250 bar - Isocratic	
1000 mL/min pump - 200 bar - Isocratic	
2000 mL/min pump - 100 bar - Isocratic	
3000 mL/min pump - 100 bar - Isocratic	
5000 mL/min pump - 100 bar - Isocratic	
10000 mL/min pump - 100 bar - Isocratic	
15000 mL/min pump - 100 bar - Isocratic	
Quaternary gradient for AP-TRIX	

AP-HPG2-TRIX range : High pressure binary gradient mixing

2 x 500 mL/min pump - 125 bar	
2 x 1000 mL/min pump - 125 bar	
2 x 2000 mL/min pump - 100 bar	
2 x 3000 mL/min pump - 70 bar	
2 x 5000 mL/min pump - 100 bar	
2 x 6000 mL/min pump - 100 bar	

Hydraulic devices :

Manual solvent selectors	
Manual purge valve	
Recycling valve	
Backflush valve	
Column selection valve (for 2 columns connection)	

Injection unit :

Injection through external pump

50 mL/min pump - 300 bar - Isocratic	
100 mL/min pump - 250 bar - Isocratic	
250 mL/min pump - 200 bar - Isocratic	
500 mL/min pump - 100 bar - Isocratic	
1000 mL/min pump - 100 bar - Isocratic	
2000 mL/min pump - 100 bar - Isocratic	
3000 mL/min pump - 70 bar - Isocratic	

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Loop injection through manual valve

Injector for AP-HPG2-250/500/1000 ☐
1 mL stainless steel Loop, 1/8" OD ☐
2 mL stainless steel Loop, 1/8" OD ☐
5 mL stainless steel Loop, 1/8" OD ☐
10 mL stainless steel Loop, 1/8" OD ☐
20 mL stainless steel Loop, 1/8" OD ☐
30 mL stainless steel Loop, 1/8" OD ☐
40 mL stainless steel Loop, 1/8" OD ☐
50 mL stainless steel Loop, 1/8" OD ☐

Injection through pump unit with AP-HPG2 pumps

Injection unit for AP-HPG2-250 ☐
Injection unit for AP-HPG2-500 ☐

Detection :

UV 06S SINGLE, standard filter 254 nm, other filter on request ☐
UV 06S DUAL, standard filters 254 and 280 nm, other filters on request ☐

UV 06S DAD 400, 200-400 nm, four wavelengths simultaneously, scan of spectrum ☐
UV 06S DAD 600, 200-600 nm, four wavelengths simultaneously, scan of spectrum ☐
UV 06S DAD 800, 200-800 nm, four wavelengths simultaneously, scan of spectrum ☐

RI Detector KNAUER S2300 ☐

Evaporative Light Scattering Detector "ELSD" SEDERE SEDEX Model 80LT ☐

Fraction collector :

Number of ways needed ☐

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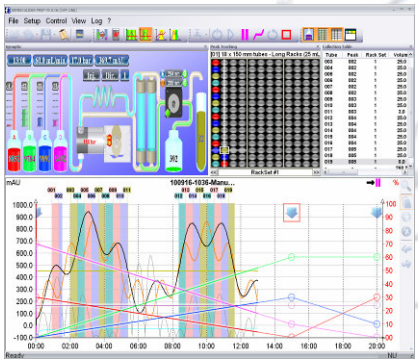
General features :

Hardware interfaces

PC to “Armen” instruments - By RS232
Between “Armen” instruments - Bus Can
PC to UV detector - By RS232

Software interfaces



Controlling “Armen Glider Prep” software (AGP)
A supervision screen allows following and controlling all operating parameters :

- Pump flow rate, pressure, high and low pressure safety
- Sample volume or injection time
- Gradient former and all switching valves
- Detectors and data acquisition
- Fractions collector drove by time, level and derivate peak detection
- Level of the solvent, fractions and waste reservoirs.
- Methods and data acquisitions are saved

Recording CFR 21 part 11 compliant “Armen Glider Prep” list :

- Access control : Software access is limited to authorized only persons through a login/password mechanism
- Access to each screen is restricted following the user profile scheme
- Each event below is recorded (times tamped in a protected database)
    - User Login/Logout
    - Method Ran/Stopped
    - Device communication errors
    - Times stamped records of every event: RUN, STOP and PAUSE...
    - Data records with all parameters every second (AU, flow rate, gradient, pressure, collector position, wavelength...)
    - Collection information (timestamp, seal number, peak number, volume, area)
- Three files are generated while running methods (ASCII files suitable for EXCEL)
- Software versioning
- Documentation (User Requirements definition. User manual...)
- Automated installation procedure
- Software engineering practices : Integrated testing and debugging procedures

Regulation

- CE
- Directive C. E. M. n° 89/336/CEE modified by directive n°92/31/CEE and 93/68/CEE.
- Directive Low voltage n° 73/23/CEE modified by Directive n°93/68/CEE and according to the following norms : Norm CEM : EN55011 amendment 1 & 2, EN61000-4-2 amendment 1, EN61000-4-3 amendment 1 & EN61000-4-4.
- Norm electrical safety : EN61010-1 amendment 2 – 07/95.
- FDA
- “GMP” - Good Manufacturing Practice (added note) :
    - The conception of this instrument was done to avoid any retention volume in the liquid circuit.
    - A user manual and a service manual are delivered with the instrument, giving all necessary information to use the instrument, to replace the seals of the pumps and check valves. It’s explained in detail how to clean every parts of the instrument.
    - A practice training will be done during the IQ / OQ.
    - The materials in contact with the liquids are : Stainless steel 316L, PTFE bonded with Blass fibers, PTFE bonded with carbon fibers, FEP, Kel’F, PVDF, PEEK, Kalrez, Sapphire, Rubies, Hastelloy, Zirconium