

## C Technical specifications

### C.1 Operating data

The specifications are valid only at pressures higher than 0.2 MPa.

Flow rate range	
P-901;	
isocratic mode	0.01–100 ml/min in steps of 10 µl/min
gradient mode	0.01–100 ml/min in steps of 10 µl/min
double mode;	0.01–200 ml/min in steps of 10 µl/min
P-903;	
isocratic mode	0.001–10 ml/min in steps of 1 µl/min
gradient mode	0.001–10 ml/min in steps of 1 µl/min
double mode;	0.001–20 ml/min in steps of 1 µl/min
Pressure range	
P-901	0–10 MPa (100 bar, 1450 psi)
P-903	0–25 MPa (250 bar, 3625 psi)
pH stability range	1–13, 1–14 (<1 day exposure)
Viscosity	Max. 5 cP
Flow rate accuracy	
P-901;	
0.2–10.0 MPa	±2% or 20 µl/min whichever is greater
P-903;	
0.2–25.0 MPa	±2% or 2 µl/min whichever is greater, with compression compensation activated
Flow rate reproducibility	
P-901;	
Flow rate ≥0.5 ml/min	rsd < 0.5%
P-903;	
Flow rate ≥0.05 ml/min	rsd < 0.5%
Gradient composition	
P-901;	
accuracy	<±1% at 0.5–100 ml/min
reproducibility	rsd <0.25% at 0.5–100 ml/min
P-903;	
accuracy	<±1% at 0.05–10 ml/min
reproducibility	rsd <0.25% at 0.05–10 ml/min
Pressure sensor	
Range	0–27.5 MPa
Offset error	<0.05 MPa
Scale error	<±2%
Environment	
	+4 to +40 °C
	20–95% relative humidity
	84–106 kPa (840–1060 mbar)

## C.2 *Physical data*

Delay volumes	
Total volume between inlet and outlet (per pump module)	
P-901	<800 µl/module
P-903	<600 µl/module
Inlet- and outlet tubing	UNF 10-32 2B "Fingertights" with capillary tubing 1/16" outer diameter
Control	Stand alone or from a PC running UNICORN version 2.20 or higher, through UniNet 1 cable connection.
Degree of protection	
Housing	IP 20
Wetted materials	
Piston	Aluminium oxide
Pump head	Titanium alloy
Pump seal;	
P-901	PE (polyethylene) and stainless steel (Elgiloy)
P-903	PTFE (polytetrafluoroethylene) and stainless steel (Hastelloy)
Check valve	PTFE (polytetrafluoroethylene), PVDF (polyvinylidene-fluoride), titanium and ruby/sapphire.
Output manifold	PEEK, Kalrez and stainless steel (Hastelloy)
Chemical resistance	The wetted parts are resistant to organic solvents and salt buffers commonly used in chromatography of biomolecules, except 100% Ethylacetate, 100% Hexane, and 100 % Tetrahydrofuran (THF).
Power requirement	100–240 V AC, 50–60 Hz
Power consumption	Up to 400 VA including accessories
Digital input	5 V TTL low or contact closure (see section A.1 for pin significance)
Digital output	TTL, open collectors
Recorder output	0–1 V full scale
Functions	Languages selectable; English, German, Spanish, French, Italian
Display	2 rows with 20 characters each
Dimensions, H x W x D	150 x 260 x 370 mm
Weight	17 kg

Compliance with standards	<p>The declaration of conformity is valid for the instrument only if it is:</p> <ul style="list-style-type: none"> <li>• used in laboratory locations</li> <li>• used in the same state as it was delivered from GE Healthcare except for alterations described in the User Manual</li> <li>• connected to other CE labelled GE Healthcare modules or other products as recommended.</li> </ul>
Safety standards	<p>This product meets the requirement of the Low Voltage Directive (LVD) 73/23/EEC through the following harmonized standards:</p> <ul style="list-style-type: none"> <li>• EN 61010-1</li> <li>• IEC 61010-1</li> <li>• CAN/CSA-C22.2 No. 61010-1</li> <li>• UL61010-1</li> </ul>
EMC standards	<p>This device meets the requirements of the EMC Directive 89/336/EEC through the following harmonized standards:</p> <ul style="list-style-type: none"> <li>• EN 61326 (emission and immunity)</li> <li>• EN 55011, GR 2, Class A (emission)</li> <li>• This device complies with part 15 of the FCC rules (emission). Operation is subject to the following two conditions:</li> </ul> <ol style="list-style-type: none"> <li>1 This device may not cause harmful interference.</li> <li>2 This device must accept any interference received, including interference that may cause undesired operation.</li> </ol>