

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;	±2% or 20 µl/min whichever is greater
0.2–10.0 MPa	
P-903;	±2% or 2 µl/min whichever is greater, with
0.2–25.0 MPa	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 "Fingertight" 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">• used in laboratory locations• used in the same state as it was delivered from GE Healthcare except for alterations described in the User Manual• connected to other CE labelled GE Healthcare modules or other products as recommended.
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">• EN 61010-1• IEC 61010-1• CAN/CSA-C22.2 No. 61010-1• UL61010-1
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">• EN 61326 (emission and immunity)• EN 55011, GR 2, Class A (emission)• This device complies with part 15 of the FCC rules (emission). Operation is subject to the following two conditions:<ol style="list-style-type: none">1 This device may not cause harmful interference.2 This device must accept any interference received, including interference that may cause undesired operation.