



The MegnaJet Labjet LFR is a syringe based low flow recirculating fluid system available in both vacuum/vacuum setup (for use with Dimatix SG600 SG1024 Samba and when applying low flow recirculation to gravity heads for fluid agitation), and pressure feed setup (suitable for use with Ricoh Gen 4/5f, Toshiba TEC CFx, and other low flow pressure feed heads). The system is developed from the core functionality of MegnaJet's highly successful integrator series controller, the MISC, and features the same industry leading hydraulic pressure control used in our larger products giving industrial grade high stability fluid control no matter what the fluid level, SG or viscosity. Available with a 25ml or 40ml syringe (which can be filled with as little as required), it is ideal for drop visualisation rigs, OEM integrators, research establishments, ink and fluid manufacturers and high value materials deposition applications where stability and repeatability are process and data critical without the overhead of a full sized tank based fluid system.

Labjet LFR differs from traditional syringe based systems due to its active hydraulic pressure control. This means no more adjusting pressures and moving syringes while printing to maintain the perfect meniscus pressure at the print head as the fluid level changes. Labjet senses the fluid level and automatically adjusts itself meaning you can run full scale printing trials in a lab style setting. This self adjustment is especially important with high specific gravity fluids (for example nanoparticle based fluids) where very small level changes greatly affects the head meniscus and ultimately the end product quality.

The Labjet LFR unit features:

- Extremely compact and ideal for integration into drop watcher rigs and other compact systems.
- Optional automated auto refill system utilising non-contacting integrated level sensor available.
- Optional automated head shut off valves available for fail to safe applications.
- Hassle free syringe changing by a simple ½ turn quick release syringe mount. This allows the low cost UV compatible syringes to be quickly and easily refilled, swapped or discarded.
- Infeed and return pressure is fully dynamically settable through the user software making it simple to adjust for optimal performance or generate settings sweep data for analysis.
- Head maintenance is simple and controllable due to the system's ability to actively control meniscus pressure and also control adjustable timed ramping purges at pressures up to 800 mbar as part of its primary functionality.
- Built in brushless air pump- no need for external air sources or vacuum pumps.
- Integrated failsafe chamber automatically shuts down the system on tank overflow due to setup or pipework failure.
- Requires single low voltage 24V dc 1 amp input (supplied).
- Integrated closed loop heater support for optional external inline heater up to 65°C ±1°C on standard systems.
- Industrial grade galvanically isolated RS422 communications interface allowing setup and monitoring from any RS422 enabled device capable of generating ASCII strings such as PC, PLC, HMI or other embedded systems.
- All parameters are stored on the device allowing for hostless operation.
- Simple open source ASCII interface (for PLC and motion controller interfacing) and .NET client/server DLLs (with example code) available to allow OEMs simple and seamless integration into their end user applications.
- Fluid manager software with a feature rich GUI, which can be self branded.

Available in Standard and Customised versions

Technical specifications

Physical	
Weight	1.7kg
syringe volume	25ml (40ml optional)
Physical dimensions	212mm x 233mm x 100mm
Fluid connections	Luer connections

Compliance	
CE compliant	
RoHS compliant	
WEEE compliant	

Electrical	
Supply voltage	24 V
Supply power rating	1 A (dependent on options supplied)
Communication interface	4 wire RS 422 / 485 interface
	Optional USB to RS 422 communication gateway adapter. Supplied with Megnjet communications pack.

Software integration interface	
Open source ASCII interface.	
Optional .NET DLL SDK available on request.	

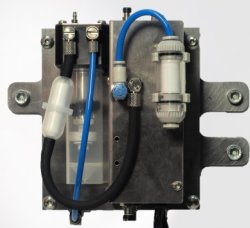
Operating conditions	
Operating temperature	5-65°C (40-149°F)
Storage temperature	5-100°C
IP rating	IP50

Connectivity to print heads	
Head type	Any low flow or gravity print head requiring low flow recirculation
Number of print heads supported	1
Maximum flow rate	60ml/min
Suggested distance from print head to unit	Greater than 50mm
Max recirc pressure	-300mbar
Max infeed/return pressure	300mbar (positive or negative depending on version ordered)
Max purge pressure	800mbar

Megnjet user interface	
Supported OS versions	Win XP, Win 7, Win 8, Win 10 (Requires .NET 4 or higher)

Standard kit

Includes controller, power supply, communication lead and spare syringes



Additional standard options

Automated fill, automated head shutoff valves, degas vacuum source and external heater.

Customisation

Units can be customised to suit fluid type and application, including (but not limited to) the use of alternate body materials (e.g. FDA approved food grade acetal and aluminium).

For further details, please contact us via our website or the email address below.

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