Applied Scientific Instrumentation

MPPI-3 Pressure Injector

The Milli-Pulse Pressure Injector, MPPI-3, is a self-contained device for producing gas pressure pulses to an injection pipette. The unit offers precise linear control of both pressure and pulse duration to meet your pressure injection needs. Alternatively, an external source such as a signal generator can be used to externally control of both the pulse width and repetition rate.

The MPPI-3 provides three methods to initiate the pressure pulse, in either Trigger or Gated mode:

- Front Panel Pushbutton Switch
- External TTL Input Signal
- Optional Foot Switch

Additional Continuous output allows ability to fine-tuning of the flow rate and to clear clogged pipettes. Maximum input pressure is 300 psi (2000 kPa). The output pressure is adjustable from 0 up to 100 psi (0 to 690 kPa). The MPPI-3 utilizes an internal gas filter for reliability and ease of maintenance.

The MPPI-3 has an input for an optional Back Pressure Unit (BPU). This option compensates for any reverse flow in a pipette caused by capillary action after a pulse by providing an adjustable (0-to-15 psi or 0-to-100 kPa) back pressure.

The new MPPI-3 case allows stacking of multiple controllers. The compact size and low cost makes the MPPI-3 an ideal choice for your pressure injection needs.

Optional Accessories for the MPPI Pressure Injector

Back Pressure Unit (BPU)

Micropipette Holder Kit

Foot Switch

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Applied Scientific Instrumentation, Inc. ✍29391 W Enid Rd ✍Eugene, OR USA 97402-9533
(541) 461-8181 ✍(800) 706-2284 ✍info@ASIimaging.com ✍www.ASIimaging.com

Input Pressure Range	0 to 300 psi (0 to 2000 kPa)
Output Pressure Range	Regulated 0 to 100 psi (0 to 690 kPa) (*Maximum output is dependent upon input pressure*)
Output Pulse Range	Four user-settable ranges: ??5 ms to 100 milliseconds ??5 ms to 1 second ??5 ms to 10 seconds ??5 ms to 60 seconds *Minimum duration is limited by the pneumatic solenoid valve to approximately 5 milliseconds*
Output Pulse Setting	Via a front panel 10-turn calibrated dial
Output Pulse Accuracy	0.4% of full scale (crystal controlled)
Output Pulse Repeatability	0.4% of full scale (1% over the life of the valve)
Output Pressure Gauge	Front panel analog gauge: 0 to 100 psi (0 to 690 kPa)
Valve Life Expectancy	100 million cycles
Modes of Operation	??Continuous flow ??Timed Pulse Duration flow control ??Gated flow control
Control Options	??Front panel pushbutton switch ??External TTL input signal ??Optional foot switch or other type of manual switch
Output Sync	Allows monitoring of the valve control and the daisy-chaining of multiple controllers, as well as synchronizing the injection pulse with micromanipulators and piezo cell penetrators
Gas Input and Back Pressure Fitting	1/8" (3.18 mm) Barbed hose fittings
Gas Output Fitting	1/16" (1.59 mm) Barbed hose fitting
Recommended Gas	Nitrogen or clean dry compressed air (An internally-mounted input gas filter is provided)
Power Requirements	Power Module: 100 to 240 VAC, 50 to 60 Hz, 0.5 A *(Direct Power Connection: 12 VDC, 1.5 A, 18 Watts)*
Size	*Unit only:* 2.7" H x 8.2" W x 8.5" D (69 x 209 x 216 mm)
Weight	*Unit only:* 2.4 lb (1100 g) *with Power Module & Cord:* 3.2 lb (1450 g) *BPU, Micropipette Holder, and Foot Switch:* 1.5 lb (680 g)

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