DMP-7000 Single-Use Pulsation Dampener

MALEMA

Single-use pharmaceutical/biopharmaceutical manufacturers face a common challenge: pulsation caused by positive displacement (PD) pumps can negatively affect the tightly controlled flow rates and line pressures required in chromatography and tangential flow filtration (TFF) processes, resulting in reduced inline-mixing effectiveness and substantial yield loss.

To combat this challenge, Malema has developed the DMP-7000 Single-Use Pulsation Dampener. The DMP-7000 features a series of flexible polyurethane membranes in an ergonomically molded shape that reduces pump-related pulsations by up to 95%, which results in stabilized downstream flow, more accurate flow and pressure readings, and higher yields.

FEATURES

- Smooth, flexible polyurethane membranes that reduce shear
- Polyurethane and PEEK wetted paths that meet USP Class VI, USP 661.2 and USP 788 regulatory requirements
- Gamma-stable to 50 kilogray (kGy)
- Patent-pending single-use design
- Pressure rating to 90 psi (6 bar)
- Hose-barb or tri-clamp fluid connections
- Offered in 1/16”, 1/8”, 1/4”, 3/8”, 1/2”, 3/4” and 1” sizes

PRINCIPAL OF OPERATION

The fluid being transferred enters the DMP-7000 downstream of the positive displacement pump. Inside the dampener, the flexible polyurethane-membraned chambers absorb the pulsation that is created by the pump's operation and stabilize the downstream flow and pressure rates.

FLOW OUTPUT TRACES

The following graphs illustrate how well the DMP-7000 is able to suppress pulsation within the fluid that is being transferred:

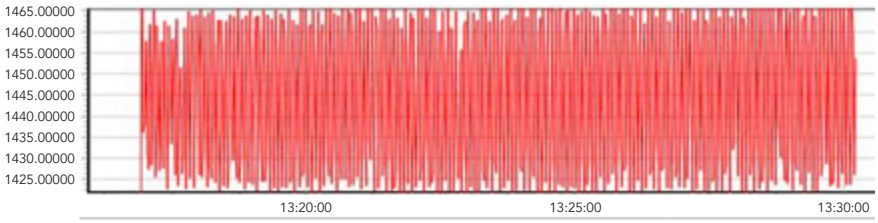

Figure 1. 1/4" ID fluid path with water, pumped using Quattroflow QF12DISPP-3-EZ Quaternary Diaphragm Pump without dampener. The difference between min and max flow is approx. 40 g/min at 1445 g/min nominal flow rate

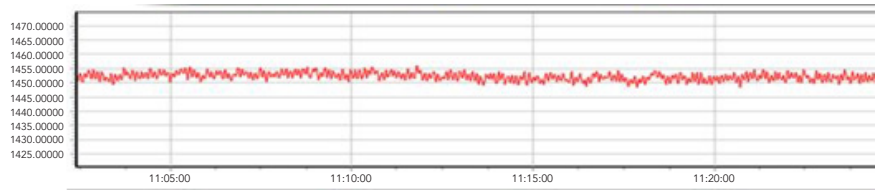

Figure 2. The same 1/4" ID fluid path with water, pumped the same industry-standard diaphragm pump with DMP-7000 installed between pump and flow meter. The difference between min and max flow is approx. 5 g/min at 1453 g/min nominal flow rate

APPLICABLE APPLICATIONS

- Filling and Fluid Transfer
- Chromatography
- Tangential Flow Filtration
- Depth Filtration

MAL-20000-F-01

Authorized PSG® Partner:

Where Innovation Flows

PSG
1060 S Rogers Circle
Boca Raton, FL 33487 USA
P: +1 (800) 637-6418
psgdover.com