



DESIGNING INNOVATIVE VACUUM
GAUGES AND CONTROLLERS FOR
OVER 30 YEARS

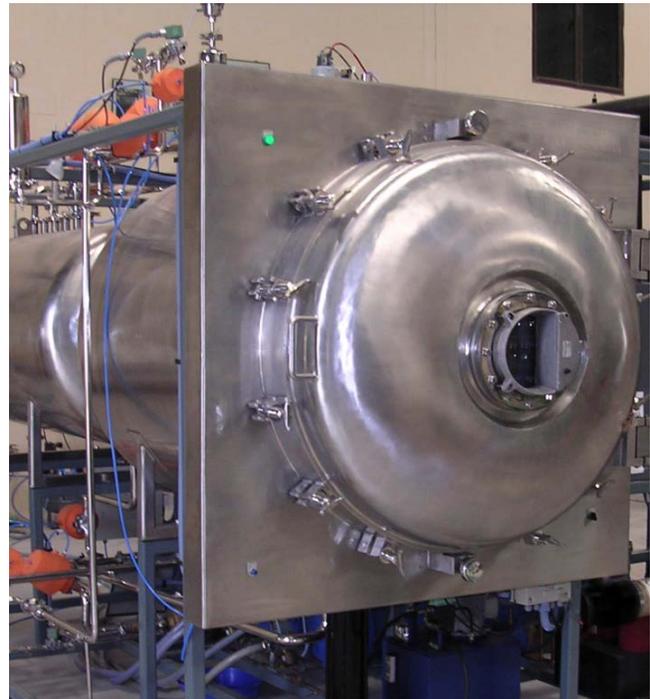
BUYERS GUIDE \ Vacuum Instruments For Freeze Drying Systems

Overview:

Accurate, reliable vacuum readings during freeze drying processes is one of the bigger challenges faced by users of older lyophilizers and an even greater challenge faced by those designing new systems.

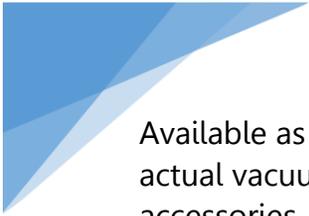
Freeze drying, whether done on an industrial scale (prepared foods, coffee, pet products) or in laboratory/ Pharmaceutical facilities (chemical compounds, vaccines, tablets), is a process of controlled dehydration wherein system vacuum levels greatly influences not only product quality, but the efficiency of the entire drying cycle.

Much of the drying profile hinges on proper integration of the vacuum instrument into the host drying system. In the following sections, DigiVac's lead vacuum engineer provides a rundown on specific vacuum instrument Model Numbers that are commonly installed in freeze dryers.



Basic Freeze-Drying Gauge

The **Digivac Model 22W** is a compact, active gauge controller/transmitter that is capable of monitoring freeze dryer vacuum chambers from atmosphere all the way down to 1 milliTorr, and controlling boost pumps or blowers in the critical < 10 Torr pressure range. Its 5 volt analog signal and RS232 capabilities are an effective communication bridge between the freeze dryer vacuum system and PLC/ dedicated controller.



Available as a transmitter only, or with a **backlit LED display** for visual indication of actual vacuum levels, the 22w instrument ships calibrated, tested, and complete with all accessories, ready for installation in the appropriate vacuum system.

Retrofitting Or Multi/Large Chamber Systems

A popular retrofit into older freeze dryers or new units with multiple or large chambers, the **Digivac 801w Series vacuum instrument** offers a robust feature set and easy integration into virtually any freeze drying platform. The 801w instrument is a compact, panel-mount controller that features bright, LED display of vacuum readings, with the same communication interface as the 22w series (analog output signal, RS232). Two SPDT process control relays are also included, which can be used to control chamber backfill or purge valves, boost pumps, or trigger virtually any event during the freeze drying vacuum cycle. With its industry-familiar mounting pattern, remote sensor on ten-foot cable, and convenient wide-range switching power supply, installation is a snap.

For those who prefer a 1/8-DIN mountable instrument or those who require portable gauging for lyophilizer service, the **Digivac 215V incorporates all of the above features**, and adds changeable units (Torr, mBar, kPa).

Engineer's Choice for New Systems

Designing or building a new freeze drying system? Consider the Digivac **Stratavac VLC** as the front end vacuum controller in your complex freeze drying installations. The Stratavac VLC is a highly-adaptable, modular vacuum instrument capable of precise vacuum monitoring and vacuum level control. No need for complex hardware and associated programming; a Stratavac with a single **Thermocouple sensor** and VLC card utilizes upstream bleed methodology to report and maintain (regulate) chamber vacuum leaving your PLC or host controller free for other process demands. The Stratavac is available with multiple sensor cards in one chassis giving the ability to monitor several critical system locations such as remote condenser chambers, product manifolds or large ice banks.

In systems where large amounts of water vapor may pose difficulty with thermal-type vacuum sensors, the Stratavac can host a gas-independent capacitance manometer in any available sensor slot. As with the **801w series** or **215V** instruments, a multitude of features and connectivity options allow easy integration into your freeze drying system.



Conclusion:

Whether your freeze drying system requires a simple transmitter such as the 22w or a more complex controller like the modular Stratavac VLC, the DigiVac team is highly experienced in providing industrial solutions that work flawlessly for vacuum and drying applications.

Got a vacuum related problem that you would like to solve?

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