Bullseye DASH Operation Manual

Software Version K22C23

YOU MUST READ THIS MANUAL BEFORE USE

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Section 1: Overview

The Bullseye DASH is a rugged portable vacuum instrument that was designed to make vacuum measurement easy, useful and intuitive. It can power and read a wide variety of industry standard vacuum sensors and capacitance manometers. The settings can easily be configured on the fly – the software does all the work to convert the electrical signal to pressure.

Its main features include a graphical LCD display with an orange backlight which shows large numerical fonts for a simple vacuum readout, as well as digital graphics to show line graphs and time horizons of data from 2 minutes to 2 hours. This graphical display of vacuum pressure makes understanding system trends easy.

Features

- Rugged design for field or laboratory use
- Dimensions: 6.2" x 3.7" x 1.3"
- Only requires 4 AA alkaline or Micro-B USB to Power
- Magnet for convenient mounting in the field
- Battery life of 2800mAh/25mA, or 127 hours (~ 5 days). For longer usage, use Micro-B USB power.

Vacuum Sensors and Ranges

The DASH's range is sensor-dependent; see manufacturer data sheets for accuracy specs. The vacuum interface is also sensor-dependent; NPT, KF16, KF25, Con-flat, and VCR options are all available. DigiVac also stocks a wide variety of vacuum interface adapters to provide the proper connection for your system, including hose barbs, reducers, clamps, and O-rings. Consult DigiVac for availability.

Currently Supported Sensors:

- Quantum Sensors (DPP, DCP, DPCP)
- Capacitance Manometers (0.1 Torr, 0.5 Torr, 1 Torr, 5 Torr, 10 Torr, 20 Torr, 50 Torr, 100 Torr, 1,000 Torr)
- Pfeiffer PKR251

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Resolution:

1 Torr to 10 Torr: 0.01 Torr increments
10 Torr to 100 Torr: 0.1 Torr increments
100 Torr to Atmosphere: 1 Torr increments

Units of Measurement:

microns, millitorr, Torr, mbar, Bar, kPa, pascals, PSIA, mmHg, inHg, mmH2O, inH2O, PSIG

Section 2: Quick Start for Bullseye DASH

While this vacuum instrument has many features, it is very simple to use. Start by unpacking the unit to verify you've received everything you've ordered.

Packing List

- Vacuum instrument with black rubber boot
- Attached: 10" sensor cable with FCC68 connector designed to plug directly into the sensor
- Vacuum sensor (specified by the user)
- Quick Start Guide or (this) user manual

Setting Up the Bullseye DASH

- Mount the DASH vacuum sensor into the system to be measured.
- Attach the sensor cable onto the sensor, using the provided FCC68-to-DB9 adapter if needed.
- Power on the device by pressing the PWR/ENT button. It will take about 5 seconds to fully power up and for the reading to settle.
- Your gauge comes with 4 pre-installed AA batteries. You can also power by attaching a Micro-B USB power cable and a cell phone charging block.
- The battery door is underneath the blue rubber boot, which must be removed to access the door.
- If need be, turn on the backlight using the Up arrow. The backlight does not affect gauge reading or accuracy.
- Read vacuum!

Section 3: **Menu and Display**

The Bullseye DASH has two modes of display: Large Number and Graph.

The large number display is a simple numerical readout in whatever unit of measurement you've chosen.

The graphical display mode features a user-selectable line graph, bar graph, or pumpdown graph with time horizons of anywhere from 2 minutes to 2 hours.

The numeric display has two formats: Scientific and High Resolution. The Scientific format will convert the vacuum reading into scientific notation (ex. 760 Torr would read 7.6E+2). The High Resolution format is the raw vacuum data, which provides more granular readings but may appear noisy at pressures closer to atmosphere and/or when reading in microns/millitorr.

The UP and DOWN buttons turn the backlight on and off and scroll through the menu, the SEL button enters the configuration menu and confirms the selection, and the PWR/ENT button turns the gauge on or off, and exits to the main screen.

If the sensor has failed or been disconnected, the DASH screen will read SENSOR?. The screen will also read Overrange or Underrange if the vacuum level is lower or higher than the sensor's range (ex. A 0.1 Torr manometer will read Overrange if the vacuum level is >0.1 Torr).
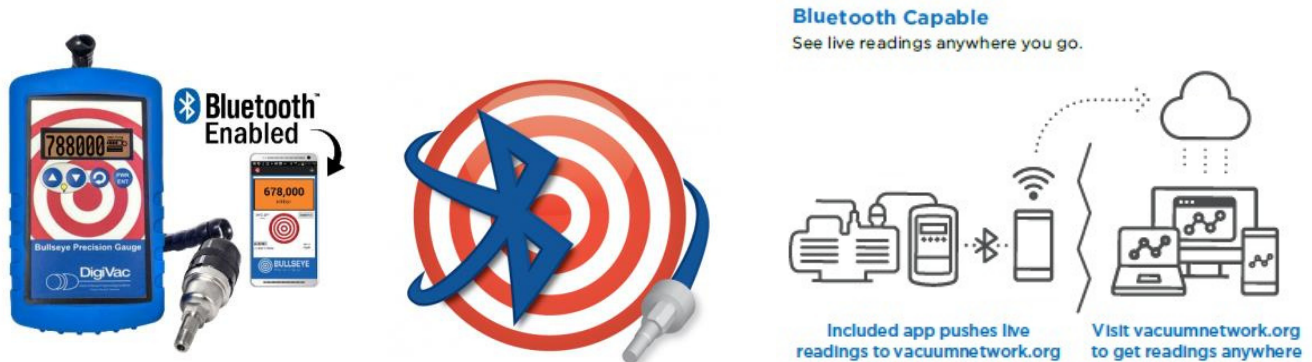
Section 4: **Maintenance, Service & Calibration**

Note: The Bullseye DASH was tested and configured at the factory to work with the vacuum sensor it was purchased with. For instructions on how to change the driver so the DASH will work with a different sensor, please contact the technical support department at DigiVac. User adjustments to the calibration menu are not necessary and may result in the gauge malfunctioning.

The Bullseye DASH is designed for trouble-free use with little or no maintenance required. A few best practices should be followed. Mount the sensor in flange-down orientation if possible. Vacuum sensors are a consumable part that can be damaged by liquid ingress, positive pressure, or process contaminants. Protecting them from excess damage will extend their lifespan.

All gauges are tested under real vacuum in our factory using certified reference standards. DigiVac offers standard calibration and repair services as well as NIST-certified calibration, where we record the DASH's readings at specific test points compared to a certified reference standard and issue paperwork with the results.

Section 5: Bluetooth Connectivity

The Bullseye DASH can be ordered with a Bluetooth module, which interfaces with the Vacuum Gauge Application for remote, real-time vacuum monitoring and graphing through a phone or tablet. The vacuum data can then be exported to a .csv file and shared. The app can be found by searching "Vacuum Gauge" in the Apple Store or Google Play Store. The app range is up to 300 feet under ideal conditions.

- Versatile digital vacuum gauge that you can monitor right from your phone or tablet (Apple ios and android)
- Enables remote monitoring and troubleshooting
- Set low and high alarm from your phone
- Email vacuum data to document leaks, baseline pressure or pump-downs

To enable Bluetooth monitoring, on the DASH scroll to the menu section marked Bluetooth, and enable or disable the signal with the up or down arrow. See the Vacuum Gauge Application instructional addendum to enable app functioning.

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