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Product Review

It's Two Gauges in One
The XP3i Dual Display (DD)

Introduction

The XP3i Digital Pressure Gauge from **Crystal Engineering** is recognized worldwide for its precision, durability, and versatility. The **Dual Display (-DD)** version builds on these strengths by adding a second, customizable line of information to the display—giving users immediate access to more data without sacrificing simplicity.

This application note highlights what makes the XP3i -DD unique, the benefits of upgrading from the single display version, and the various data types available for the second display.

What is the Dual Display XP3i

The standard XP3i provides a single, high-accuracy pressure reading. The Dual Display (-DD) version enhances that experience with a second line on the LCD, allowing users to view additional data—such as peak pressure, rate of change, or tare value—at a glance.

This added flexibility turns the XP3i into a more capable diagnostic and monitoring tool, ideal for users who need more than just a pressure reading to manage their process efficiently.



Standard



Dual Display

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Data Types Available for the Second Display

The dual display (DD) XP3i allows users to cycle through several data types for the second line via the keypad. The data types are selected and deselected from the free online CrystalControlWeb software located at https://crystalcontrolweb.com/. Some data types are only available in the DD version.

- **Maximum Detected Pressure (Peak High)**: Displays the highest pressure recorded since the last reset—ideal for monitoring system limits or verifying test results.
- **Minimum Detected Pressure (Peak Low)**: Shows the lowest pressure recorded, useful for detecting leaks or checking system integrity.
- **PSV (Pressure Safety Valve) Mode**: Captures and displays both the opening and reseat pressures of a pressure safety valve—essential for maintenance and compliance documentation. In order to more accurately detect the peak and reseat pressure, the PSV increases the XP3i measurement rate from approximately 4 readings per second to 8.
- **Average Pressure**: Calculates a rolling average (1–10 readings, updated four times per second) to smooth out fluctuations in dynamic systems.
- **DataLoggerXP Mode**: When equipped with the DataLoggerXP option, the second line can display logging status, number of recorded data points, or other logging parameters.
- **Tare Value (Dual Display Only)**: Enables subtraction of a constant baseline pressure—ideal for gas mixing or differential testing. For example, if you were mixing gasses by partial pressure, you might want to fill a tank to 1760 psi with air, then add another 440 psi of helium. To reduce the chance of error, you could tare the gauge at 1760 psi. Then add helium until the display shows 440 psi. The tare value is shown on the second line.







- **Rate of Change (Dual Display Only)**: Shows the rate of pressure change per minute, averaged over the most recent 3–10 calculations—helpful for monitoring transient events or system responsiveness.



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Advantages of the Dual Display Gauge

Enhanced Data Visibility

- **Simultaneous Readouts**: View live pressure alongside secondary data—no need to toggle through menus or use a separate instrument.
- **Customizable Information**: Configure the second line to show exactly what's most useful to your process, improving situational awareness and reducing guesswork.

Improved Workflow Efficiency

- **Faster Diagnostics**: Two key measurements visible at once mean quicker troubleshooting and more informed adjustments.
- **Reduced Human Error**: Displaying critical secondary data such as rate of change or tare value directly on the gauge minimizes the chance of misinterpretation.

Application Flexibility

- **Adaptable to Multiple Use Cases**: From monitoring pressure peaks to calculating averages or rates, the dual display easily adapts to your needs.
- **Ideal for Advanced Testing**: Applications like pressure safety valve (PSV) testing, gas mixing, and dynamic pressure monitoring benefit greatly from the additional information line.

Competitive Differentiation

- **Modern User Experience**: The dual display provides a more intuitive, data-rich interface that stands apart from conventional single-line gauges.
- **Future-Proof Investment**: As data-driven decision-making becomes more important, the XP3i -DD ensures your instrumentation can evolve with your needs.

Conclusion

The XP3i Dual Display (-DD) brings a new level of capability to Crystal Engineering's proven pressure gauge platform. By combining high-accuracy measurement with customizable, real-time data display, it enhances visibility, speeds up decision-making, and broadens application possibilities. Whether you need to capture peak readings, monitor dynamic changes, or streamline testing workflows, the XP3i -DD provides the flexibility and insight professionals expect from the most advanced digital pressure gauge in its class.

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