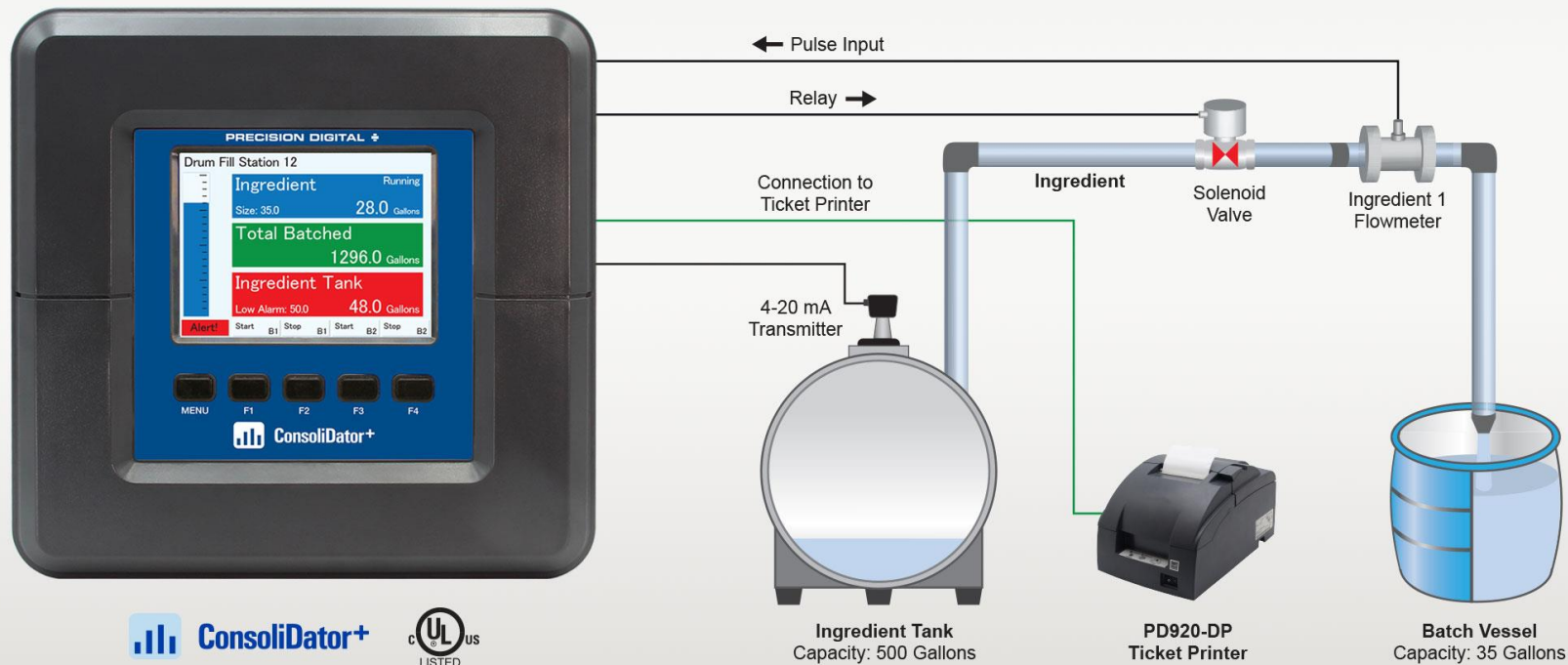


# New ConsoliDator+ Advanced Batch Control & Ticket Printing Features





## Joe Ryan

*VP of Sales & Marketing*

Joe Ryan is the VP of Sales and Marketing at Precision Digital. He brings 20 years of process industry experience in the design, support, manufacturing, marketing, and sales of process measurement and control devices. Joe has extensive field and support experience with process displays and controls, and a strong technical background including a bachelor's degree in Electromechanical Engineering and a master's degree in Computer & Electrical Engineering.

# Agenda and Takeaways



01

Quick Review of the PD9000 ConsoliDator+ Multivariable Controller's Key Features.

02

Discover the *New Batch Control Add-On* feature, including ticket printer setup.

03

See how the large 5.7" color display simplifies multiple batches and multi-stage batches.

04

Learn about some advanced features, such as chaining batches, count-down batches, and more!

# PD9000 Quick Review



# PD9000 Quick Review

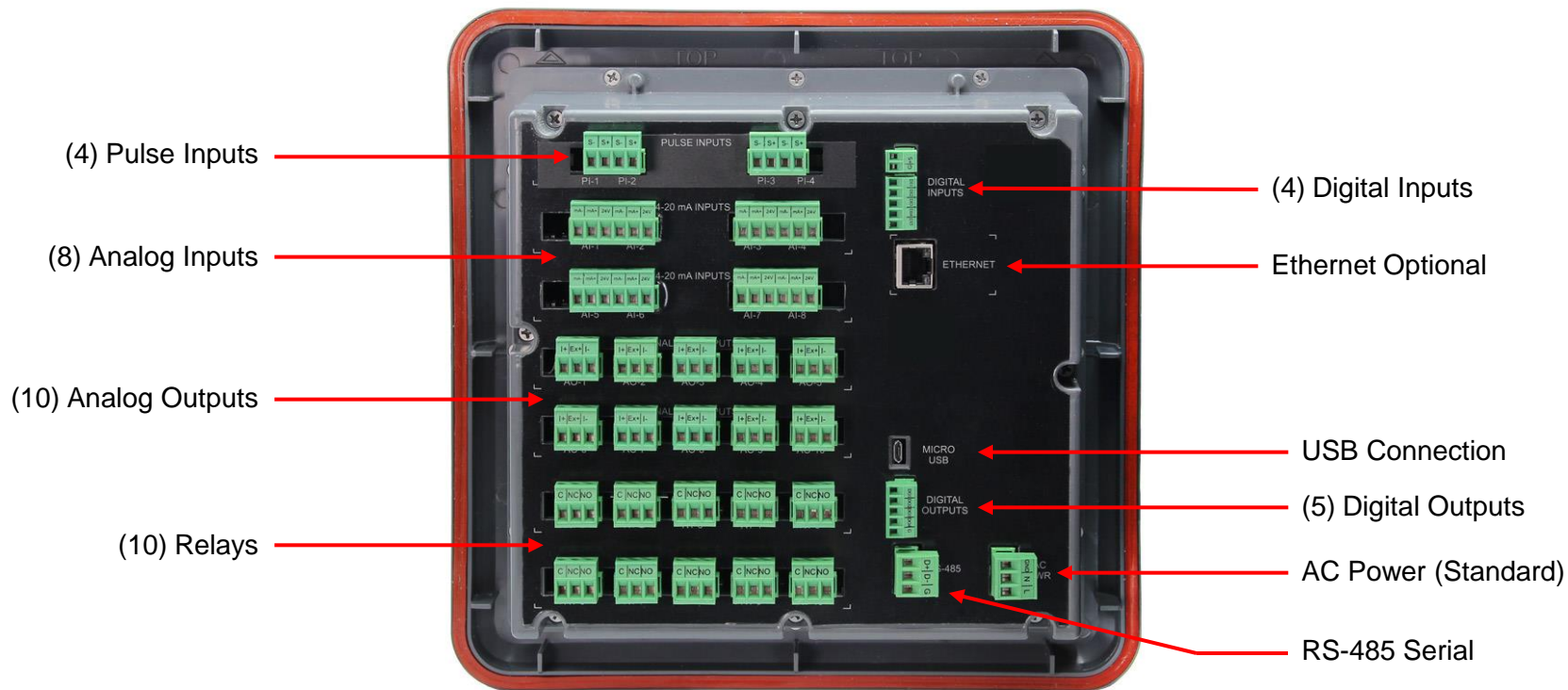


## Features

- NEMA 4X Panel Mount Multi-Channel Controller for Process Display, Alarm and Control Applications
- Accepts 4-20 mA Inputs, Flow Meter Pulse Inputs, Digital Inputs, and Modbus RTU
- Displays Numeric and Bargraph Format on a Large, 5.7" Color Display
- Multiple Relays with User-Definable Actions, 4-20 mA Outputs, Digital Outputs, Modbus RTU, and Ethernet Modbus TCP/IP
- 32 Timers to Control Many Processes or Events
- Free ConsoliDator+ Configuration Software
- UL and C-UL Listed for Hazardous and Ordinary Locations
- Auto-Tune PID Control for Multiple Control Loops
- PID Control with Analog, Digital, or Relay Outputs
- On-Off Multi-Setpoint and Lead-Lag Pump Control
- HOA Switch Functions for Controlling Pumps
- **NEW** Single-Stage or Two-Stage, Manual or Automatic Batch Control
- **NEW** Run Multiple Batches Simultaneously or in Sequence
- **NEW** Custom Ticket Printing Capabilities

# PD9000 Quick Review

## Lots of Inputs & Outputs and More!

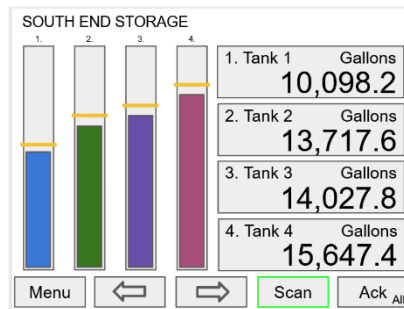


# PD9000 Quick Overview

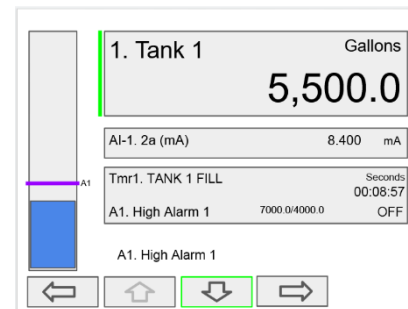
## Features

- Display up to 20 different screens in a variety of formats and colors.
- 65 colors to customize the screens for text (value), backgrounds, bargraphs, and alarm conditions for channels, totals, and timers.
- Display inputs in numeric, bargraph, and feet & inches formats.
- Display main screen, channel details screens, and more.
- Soft-keys for programming and operation.

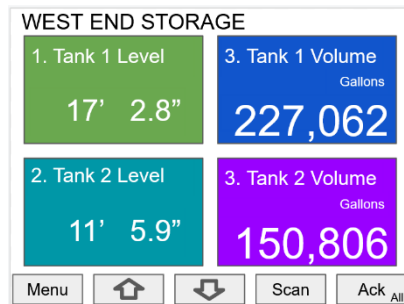
## Large 5.7" Color Informative Display



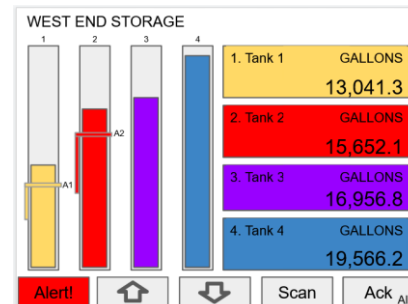
Main Screen



Channel Details Screen



Screen with Feet & Inches Units



Details Screen Showing High Alarm

# PD9000 Quick Review

# Free Configuration Software

## Features

- Easiest and quickest way to program the ConsoliDator+ multivariable controller.
- ConsoliDator+ configuration software is intuitive, and most customers can get their controller programmed without even looking in the manual.
- Convenient USB Connection.
- For the latest software version visit [predig.com/software](http://predig.com/software).





# PD9000 Quick Review

## Steel & Plastic Enclosures Available

### Features

- NEMA 4 Steel Enclosures
- NEMA 4X Plastic Enclosures
- House One ConsoliDator+ PD9000
- Cutout for One ConsoliDator+ Provided
- Hinged Door
- ConsoliDator+ Mounts in Cover
- Made for Both Indoor & Outdoor Installations



# New Batch & Ticket Printing Features

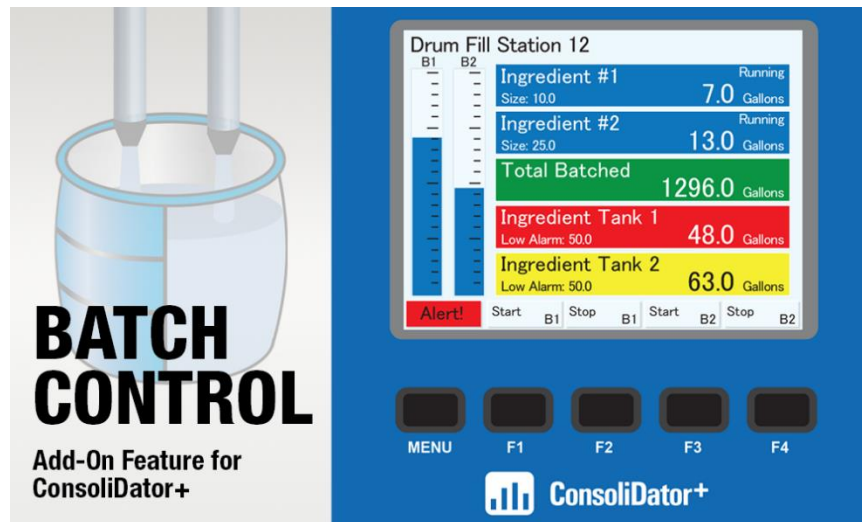


# PD9000 New Features

## How to Get the Add-On Feature

- The ConsoliDator+ requires the *PDK9000-B1 Add-On Feature* to function as a batch controller.
- It will be activated at the factory when ordered with a ConsoliDator+.
- For existing units, the Add-On feature can be purchased at any time from [predig.com](http://predig.com).
- Users will receive a key to unlock the Add-On feature if ordered separately (The ConsoliDator+ unit must have firmware version 2.4 or higher installed).

## Batch Controller Add-On Feature



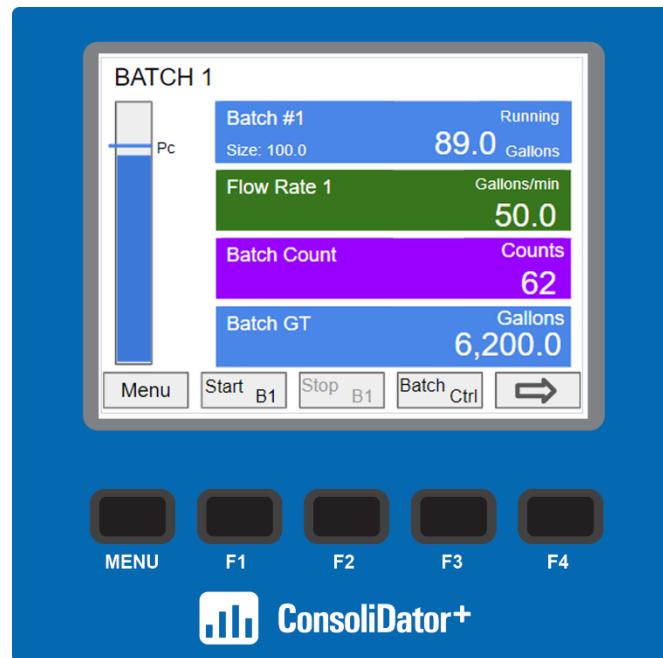
# PD9000 New Features

## Batch Control Details Screen

Displays the following batch information:

- Batch Size
- Volume in Gallons
- Flow Rate in Gallons/Minute
- Batch Count
- Batch Grand Total
- Bargraph with Pre-Close Setpoint Indicator
- Batch Status (Running, Stopped, or Paused)
- Batch Control Soft-Keys for Setup, Manual Control, and Scrolling Through Other Individual Screens.

## Batch Controller Add-On Feature



# PD9000 New Features

## Program Batch Control Using ConsoliDator+ Setup Screens

- **Custom Tag:** Enter a name for the custom tag
- **Select Color:** Text, background, and bargraph
- **Batch Input:** Input is typically a total
- **Preset:** Target batch size
- **Pre-Close:** Number of volume units prior to reaching the preset value
- **Automatic:** Next batch begins automatically after programmed amount of time has elapsed
- **Start Delay:** Enter time for start delay of next batch
- **Auto Correct:** Automatic correction for next batch (uncheck for manual correction)
- **Count Down:** Batch starts at the preset value and counts down to zero
- **Actions:** Select actions for pre-start, start, pre-close, and finish

## Batch Controller Add-On Feature

The screenshot shows the 'MENU - SETUP' screen with a timestamp of 'Friday, April 5, 2024 10:50:00'. On the left is a vertical menu with options: ALARMS, SWITCHES, BATCHES (highlighted in green), INPUTS, OUTPUTS, SCREENS, and SYSTEM. The main area on the right displays 'B1. Batch #1' in a green box. At the bottom are four navigation arrows (left, up, down, right) and a green 'New' button.

The screenshot shows the configuration screen for 'B1. Batch #1' with a 'Color 1' selector. The 'Input' field is set to 'T1. Total for Batch'. The 'Preset' is '1000.0 Gallons' with an 'Auto Correct' checkbox checked. The 'Pre-close' is '80.0 Gallons' with a 'Count Down' checkbox checked. The 'Automatic' checkbox is checked with a time of '00:02:00', and the 'Start Delay' is '00:00:10'. The 'Pre-Start Action' is 'Reset Total - T1. Total', 'Start Action' is 'Do Nothing', 'Pre-Close Act' is 'Do Nothing', and 'Finish Action' is 'Start - B2. Batch #2'. At the bottom are 'Cancel', navigation arrows, 'Edit', and 'Save' buttons.

# PD9000 New Features

## Ticket Printing Features

- Custom ticket printing for batch process information & other uses.
- Automatic and manual printing.
- Free ConsoliDator+ software allows for easy setup of batch controller and ticket printer.
- Select batch information for printing with up to 24 text entries.
- Select action for when to print ticket.
- Wall mounting kit available.
- PDA9000-CP printer card accessory required for use with PD920-DP printer (Both sold separately).

## Ticket Printing Capabilities



**PD920-DP Ticket Printer  
Accessory**

**PD9000 ConsoliDator+  
Multivariable Controller**

# PD9000 New Features

## Ticket Printer Connections

- RS-232 Serial Connection
- Available as a standard DB9 connection cable or as a depluggable connector for individual wiring
- Takes the Place of one of the 7 I/O cards available in the ConsoliDator+
- Works with the printer available from Precision Digital as well as a wide range of other printers on the market
- Models with the ticket printer connection card are not UL Listed at this time

## Ticket Printing Capabilities

### PDA9000-CP Printer Card Connection

The ConsoliDator+ can be equipped with the PDA9000-CP printer card, which installs into any available slot. With a printer card installed, the number of additional I/O cards that can be added is reduced to six. The printer easily connects to the PD9000 with the included DB9M cable.

**Note:** Consolidator+ models equipped with a printer card are not UL Listed, and the printer card occupies one I/O slot.

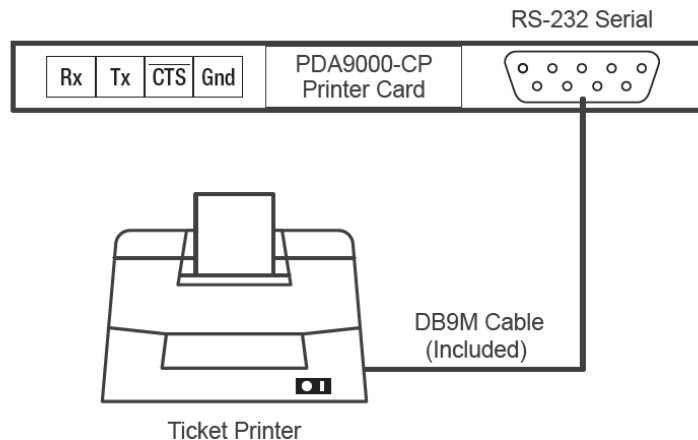


Figure 18. Printer Connections

# PD9000 New Features

## Easy Ticket Printing Setup with ConsoliDator+ Software

- Up to 24 text entries can be configured.
- Establish tab settings for printing various items on the same line.
- Select an appropriate action after ticket.
- Automatically print ticket when batch is completed.
- Manually print a ticket at any time.
- Set up a function key to print tickets.

## Ticket Printing Capabilities

The screenshot displays the ConsoliDator+ v2.4.0.0 software interface. The top bar shows the device is 'Connected' and provides details for the 'Multivariable Controller' (UID: PX1P-SUX9-5L36-J3FG, Model: PD9000-XY-4AI-5AO-10RY-1SP). The left sidebar contains a tree view of configuration categories, with 'Print Tickets' expanded and 'PT1. Batch Ticket' selected. The main window is titled 'Print Ticket 1' and contains a 'Display Tag' field set to 'PT1. Batch Ticket'. Below this is a table for configuring the ticket layout. The table has three columns: 'New Line', 'Text', and 'Action'. The rows are as follows:

New Line	Text	Action
New Line	Text 4: Start of Ticket	
New Line	Blank	
Tab 2	B1. Solvent Tank 1	Tag
New Line	Blank	
New Line	Text 8: Batch Preset	
Space	B1. Solvent Tank 1	Batch Size
Space	B1. Solvent Tank 1	Units
New Line	Blank	
New Line	Text 9: Amount Batched	
Space	B1. Solvent Tank 1	Value

Below the table is an 'Action' field set to 'None'. On the right side of the table, there are buttons for 'Insert', 'Remove', and 'Edit'. At the bottom of the window, there are buttons for 'New', 'Copy', and 'Delete'. A large, faint bar chart icon is visible in the bottom right corner of the screen.

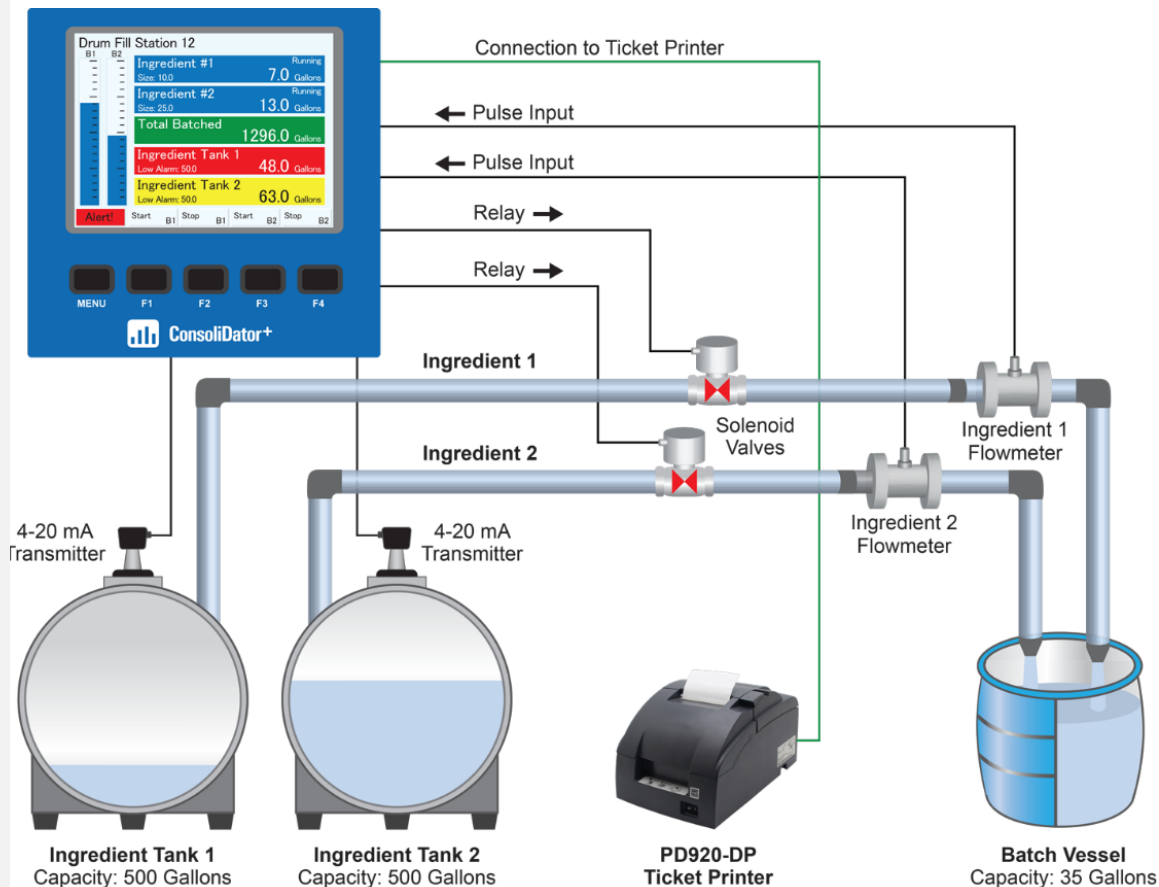


# PD9000 New Features

## Simultaneous Batch Control of Two Ingredients and Ticket Printing

- ConsoliDator+ performs two single-stage batches.
- Reads pulse inputs from flowmeters.
- Closes solenoid valves when batches are complete.
- Displays level in two source tanks using 4-20 mA level transmitters.
- Indicates low alarm situation for Tank 1.
- Ticket printer connected to print critical batch process information.
- Batches can be started and stopped using soft-keys.
- Bargraphs visually track batch progress.
- Additional screens available for viewing individual batches or other details.

## Batch Control Application Example #1

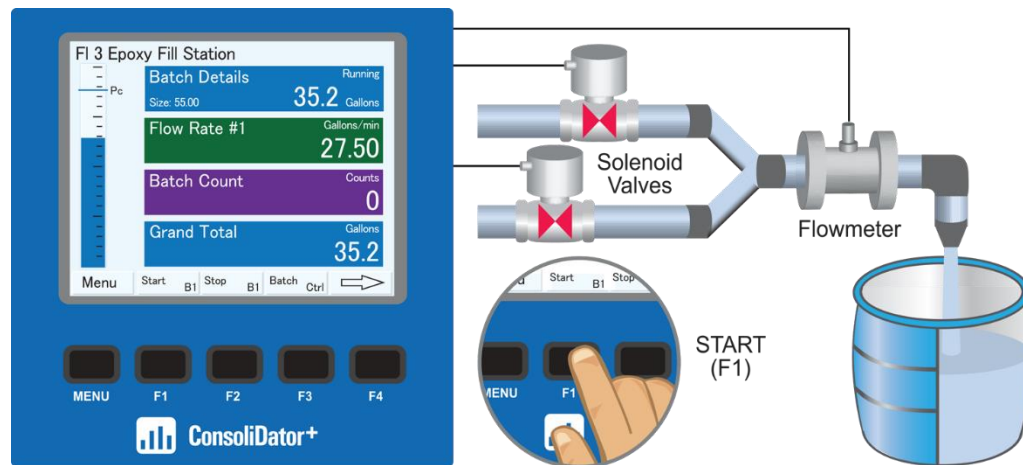


# PD9000 New Features

## Dual Stage Batch Control with Preclose & Preset

- ConsoliDator+ controls full-flow and restricted-flow valves for accurate batching of 55-gallon drums.
- Preset value of 55.00 and preclose value of 5.00 are set in the ConsoliDator+.
- Batch operation starts by pressing F1 (Start) button on the ConsoliDator+.
- Full-flow valve closes at 50.00 when preclose of 5.00 is reached.
- Restricted-flow valve stays open until preset of 55.00 is reached, completing the batch.
- Bargraph visually tracks batch progress.

## Batch Control Application Example #2

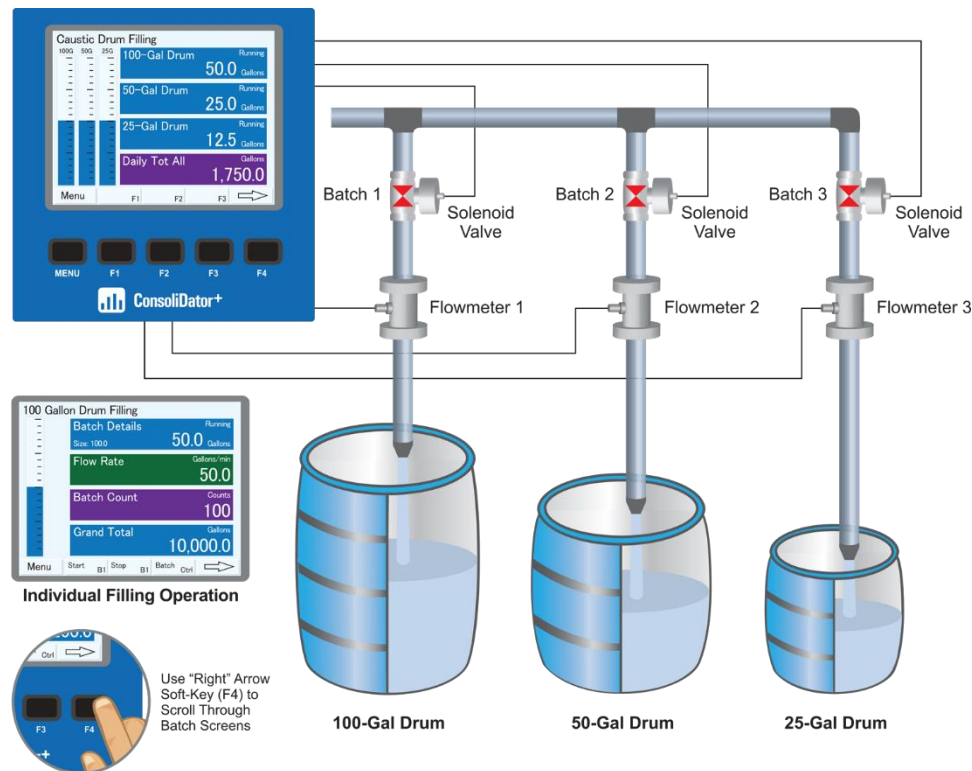


# PD9000 New Features

## Multiple (Different Size) Batches Run Simultaneously Displayed on Multiple Screens

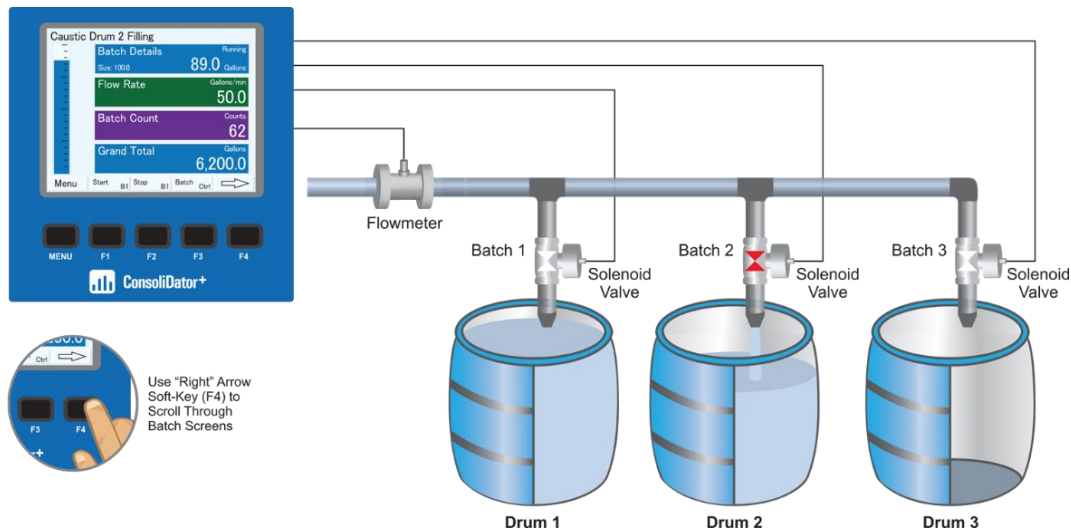
- ConsoliDator+ controls simultaneous filling of multiple drums of different sizes.
- Individual controls are provided for each drum.
- Multiple screens display information to assist the operator.
- Upper screen shows overall drum filling operation.
- Lower screen shows individual drum filling operation.
- Operator can scroll through screens using F4 (Right Arrow) button.

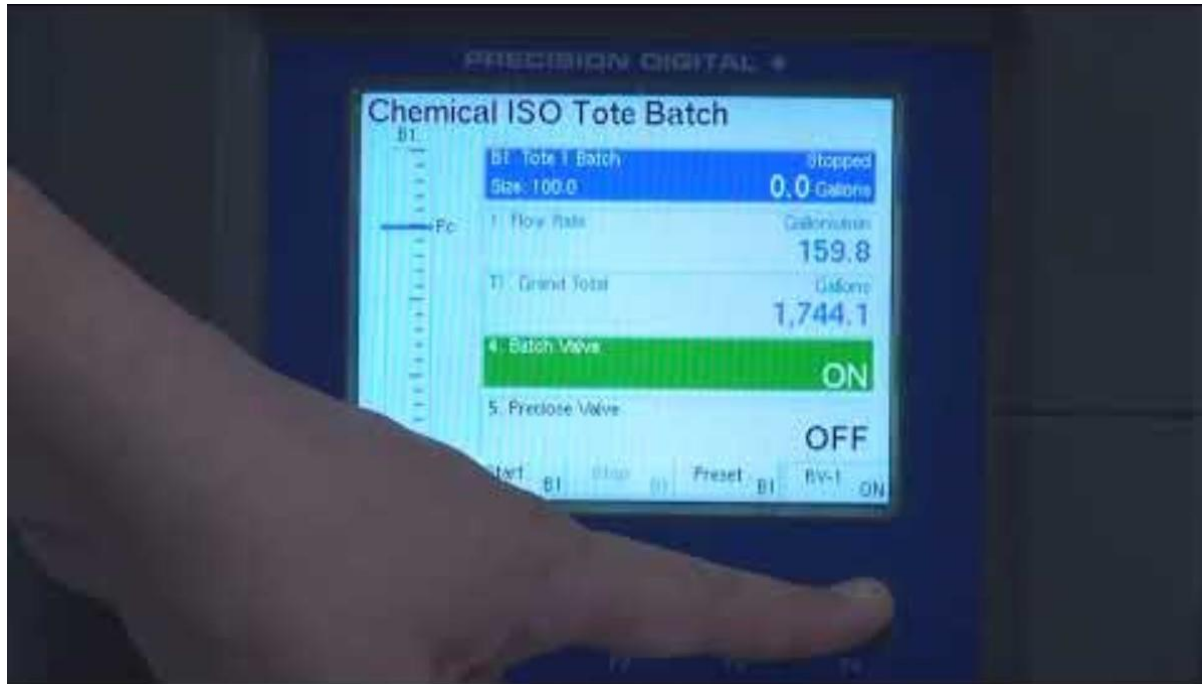
## Batch Control Application Example #3



### Multiple Batches Run In Sequence

- ConsoliDator+ controls sequential filling of multiple drums.
- Individual controls are available for each drum.
- Currently displaying screen for Caustic Drum 2 Filling operation.
- Operator can view details for the other two drum filling operations and view the overall operation by pressing F4 (Right Arrow) key.





Click on the video above to watch.

# PDD9000 ConsoliDator+

## Request a Demo Unit

### Features

- ConsoliDator+ demonstrator has everything you need to show off all its great features.
- Comes with a signal generator, so you can simulate almost any application.
- Equipped with a light/horn on the top of the unit to show indication of alarming conditions.
- Built-in feet to stabilize the unit while demonstrating.
- Protective carrying case makes it easy and convenient for transporting.

Contact Joe Ryan:

☎ (508) 315-5231    ✉ [jryan@predig.com](mailto:jryan@predig.com)



 **ConsoliDator+**



# Questions?

If you have any questions, then reach out to us.



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