

PD9000 ConsoliDator+

Multivariable Controller

 ConsoliDator+



PD9000 Installed in a PDA2909 Enclosure



PD9000

MULTIVARIABLE CONTROLLER

- NEMA 4X Panel Mount Multivariable Controller
- Convenient Display, Control, & Alarm of Multiple 4-20 mA, Pulse, & Modbus Inputs
- Numeric & Bargraph Color Display (320 x 240 pixels) 5.7" (145 mm)
- Sunlight Readable Display, White Backlight
- Isolated 24 VDC Transmitter Supplies 200 mA / Analog Input; 1,600 mA Max
- 99 Channels, 32 Totalizers, 32 Timers, & 199 Modbus Inputs
- 64 High & Low Alarms, Combine Multiple Alarms Into Logic AND & OR Alarms
- Simulation & Manual Control Modes for Testing and Setup
- Modular Design for Inputs & Outputs Flexibility
- Up to (28) 4-20 mA Isolated Inputs or Pulse Inputs
- Up to (25) 10 Amp Form C Relays (With Eight Analog or Pulse Inputs)
- Up to (25) Isolated 4-20 mA Outputs (With Eight Analog or Pulse Inputs)
- Operating Temperature Range: -40 to 60°C (-40 to 140°F)
- Pulse, Analog, & Modbus Input Flow Rate / Total / Grand Total Capability
- 50-Point Linearization, Square Root, and Exponent for Open Channel Flow
- Round Horizontal Tank Volume Calculation; Just Enter Diameter & Length
- Open Channel Flow Math Formulas for Weirs & Flumes
- Multi-Pump Alternation Control or On / Off Control with Random Varying Set Point
- Programmable Displays, Function Keys & Digital Inputs
- Math Functions: Sum, Diff, Average, Multiply, Divide, % Efficiency, & More
- Modbus Client (Master) & Snooper / Server with 99 Programmable Outputs
- Direct Modbus PV Inputs – Snooper / Server Mode
- Modbus Spoofer Feature to Replace Servers Removed from Network
- RS-485 Serial Communication with Modbus RTU / ASCII & Ethernet TCP/IP
- USB Data Logger Feature: Up to 8 Log Files with up to 12 Parameters Each
- Field Selectable Input Power: 85-264 VAC or 24 VDC
- (20) Screens with up to Eight PVs Each
- Automatic or Manual Scanning
- Free ConsoliDator+ Configuration Software
- NEMA 4 & 4X Field Mount Enclosures Available
- 3-Year Warranty

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OVERVIEW

The ConsoliDator+ is a multivariable controller that is both easy to use and satisfies a wide variety of process display, alarm, and control applications. It accepts 4-20 mA inputs, flow meter pulse inputs, digital inputs, and Modbus inputs and displays them in both numeric and bargraph format on a large, 5.7" color display. It can be equipped with multiple relays with user-definable actions, 4-20 mA outputs, digital outputs, Modbus RTU & ASCII, Modbus Enron, and Ethernet Modbus TCP/IP protocol communication. Additionally, the controller is equipped with up to 32 timers that can be used to control many processes or events.

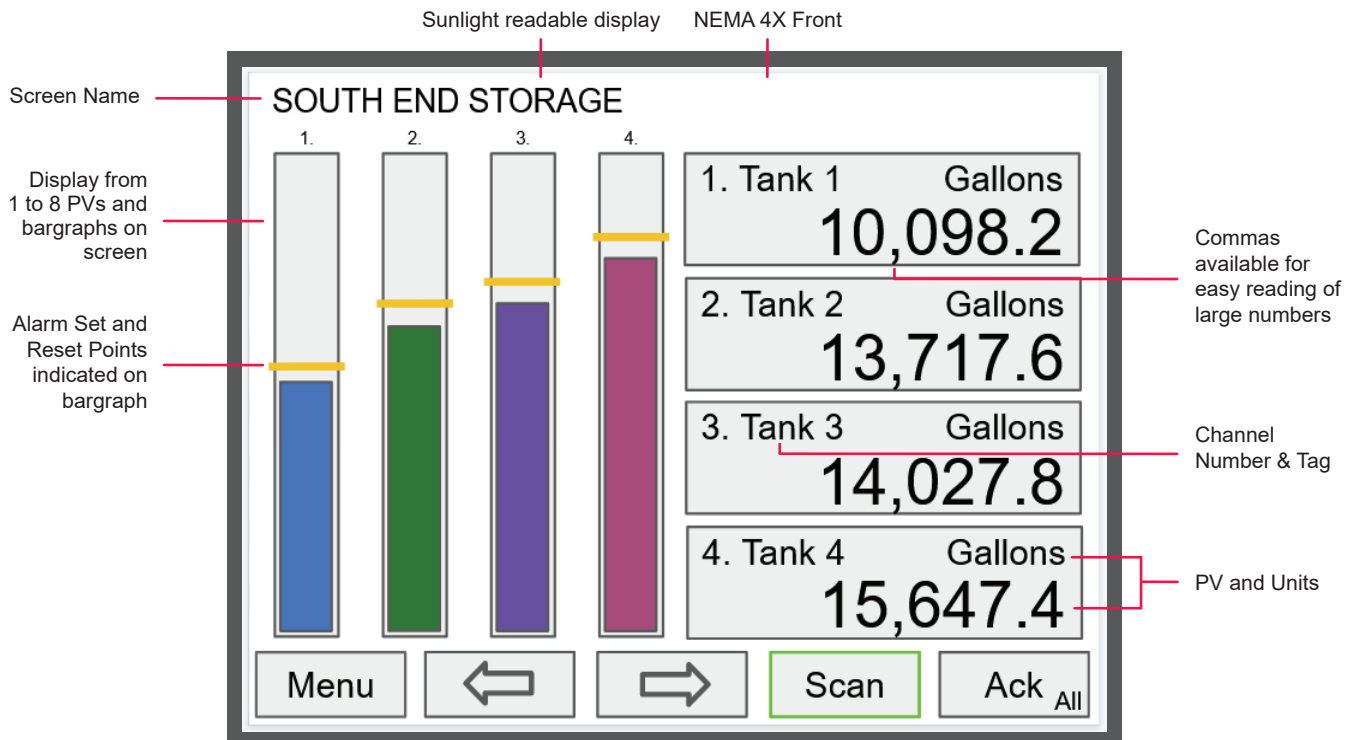
The ConsoliDator+ takes full advantage of its color display by allowing the user to customize screen colors for bargraphs, alarm conditions, and input channels.

All this functionality is easily programmed using free software or via the front panel pushbuttons. Choose the model that best suits your application, from monitoring only to fully loaded controllers with an extensive combination of inputs, outputs and communication protocols. This condensed data sheet provides a quick overview of the ConsoliDator+. The [complete data sheet](#) provides a more in-depth review of the product.

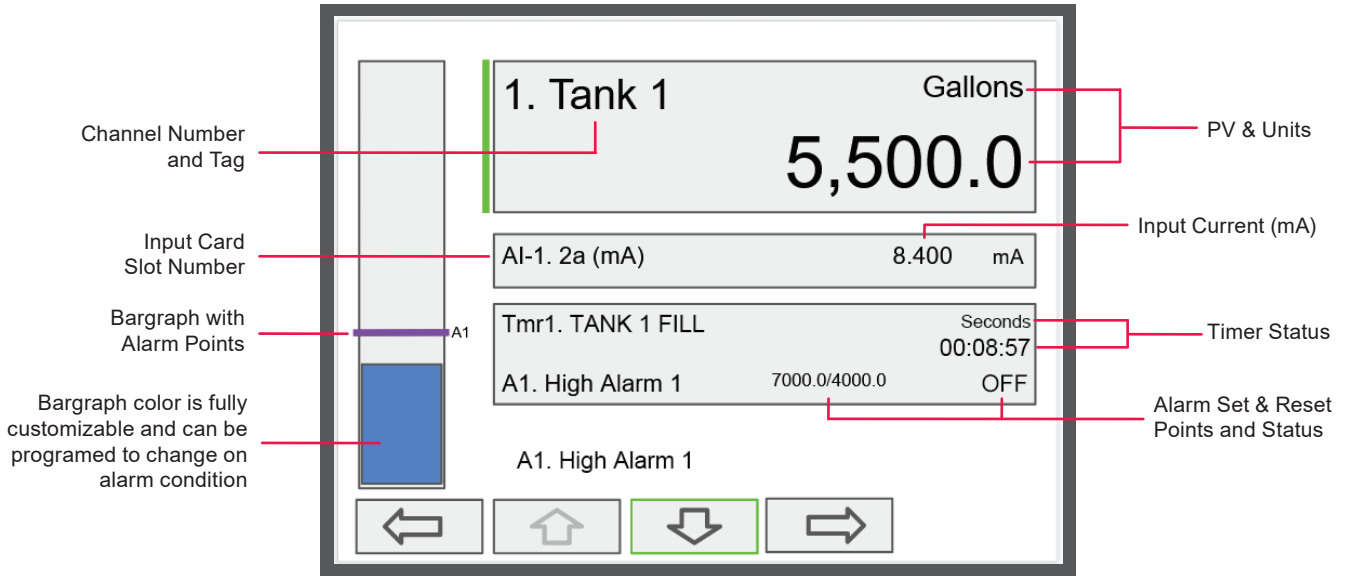
SCREENS

The ConsoliDator+ can be programmed to display the data on up to 20 different screens in a variety of formats and colors, with and without bargraphs. The following screens show a typical main screen and channel details screen:

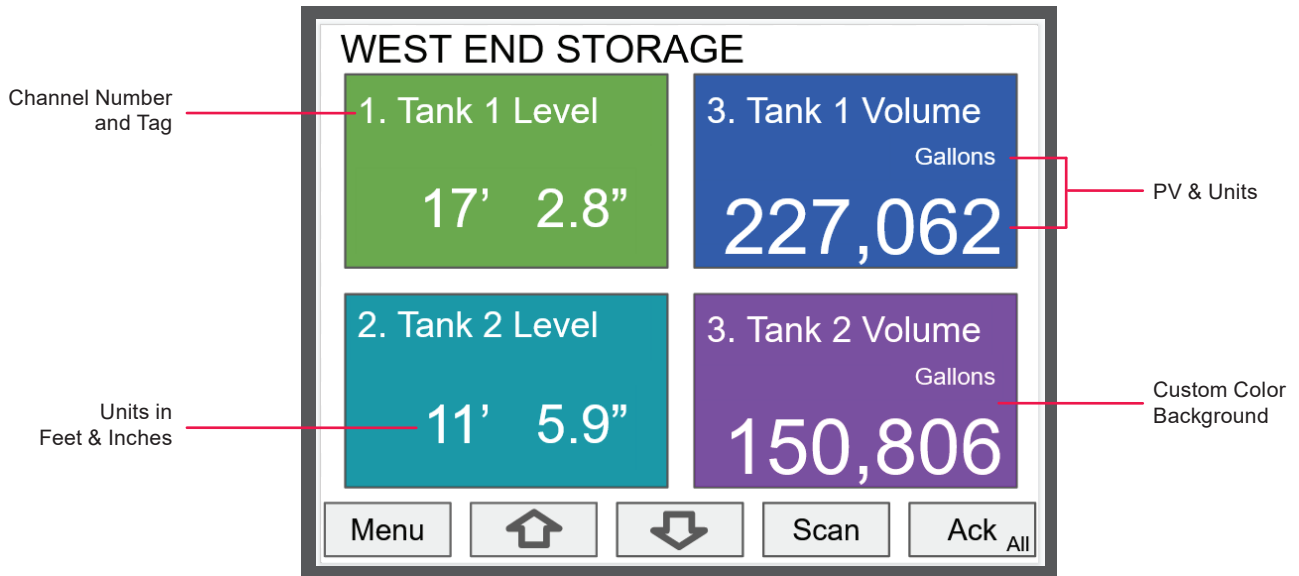
Main Screen



Channel Details Screen



Screen with Feet & Inches Units



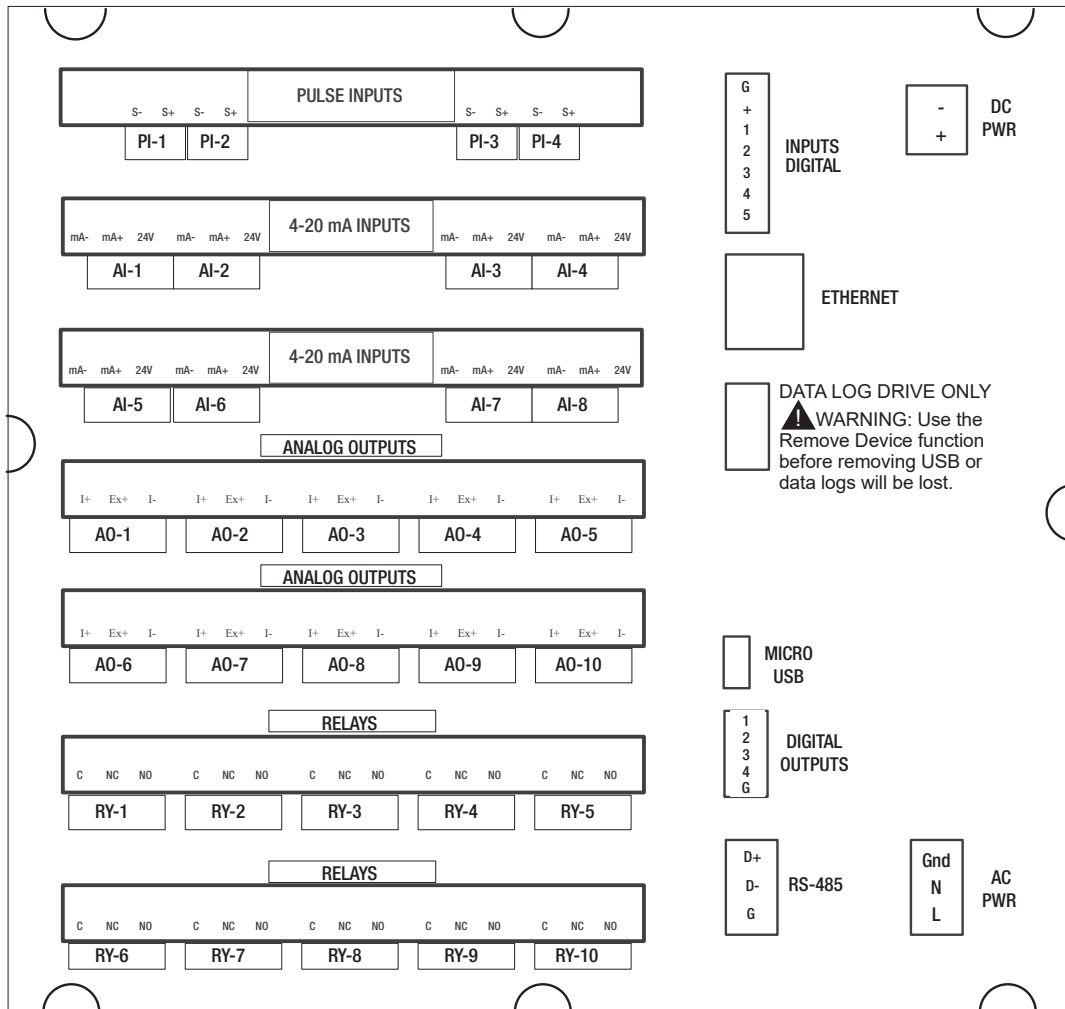
INPUTS & OUTPUTS

The back panel is labeled with the I/O boards that were installed at the factory. The removable connectors are labeled with the connection signal for each terminal. The following diagram shows what the back of the model PD9000-GP-4PI-8AI-10AO-10RY looks like. This model accepts (4) pulse and (8) analog inputs and has (10) 4-20 mA outputs and (10) relays. (5) digital inputs, (4) digital outputs, RS-485 serial capability and USB connections are standard on all ConsoliDator+ models. Ethernet is an option.

If all Input / Output slots are used exclusively for one function, the ConsoliDator+ can accept up to (28) isolated 4-20 mA inputs, (28) pulse inputs, (25) isolated 4-20 mA outputs, and (25) relays.

If used as a Modbus Client, Snooper, or Server only: It can have (35) 4-20 mA outputs, 30 relays, or (20) 4-20 mA outputs and (15) relays.

All units can be powered from AC or DC; both power connections can be used at the same time. The DC power supply can serve as backup power if the voltage is 24 V or less, otherwise the controller will run on DC power.



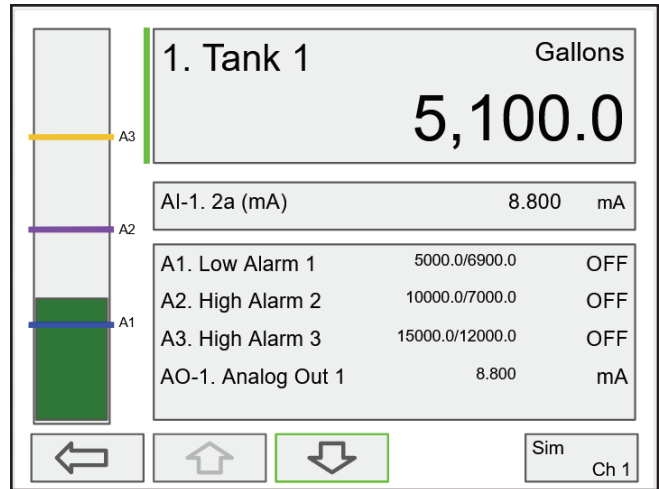
Notes:

1. Each 4-20 mA input has its own isolated 24 VDC power supply to power the transmitter.
2. Each 4-20 mA output has its own isolated 24 VDC power supply to power the output loop.
3. Each relay is Form C and rated at 10 A.
4. Input / output connections are made to removable screw connectors.
5. Every ConsoliDator+ has five digital inputs (additional digital inputs can be obtained by using the Pulse Inputs).
6. Every ConsoliDator+ has four digital outputs.
7. Every ConsoliDator+ has RS-485 with Modbus.
8. All ConsoliDator+ models can be powered from either AC or DC Power.
9. The Data Log Drive is used for the Data Logger Add-On feature.
10. Ethernet with Modbus TCP is an option.
11. Micro USB is used for programming the ConsoliDator+.

INDIVIDUAL CHANNEL VIEW

To view the details of any channel, press Menu and then press View – Channel. Select the channel of interest. Navigate through the different items using the navigation keys. A green bar indicates the selected item, press the R-key to step into and see more details about the inputs and outputs related to the channel in view.

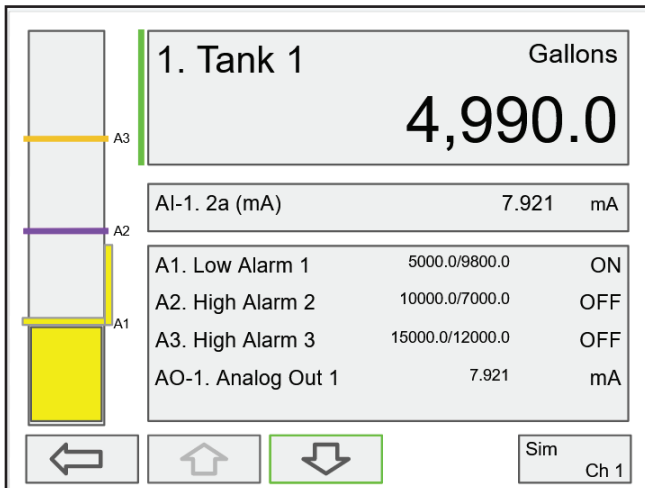
In the following examples, the screens show all the parameters associated with Channel 1 including analog input, slot number and its current value, setpoints and status of alarms, and analog output and its mA value. The bargraphs in each of these screens examples represent the current value in gallon units.



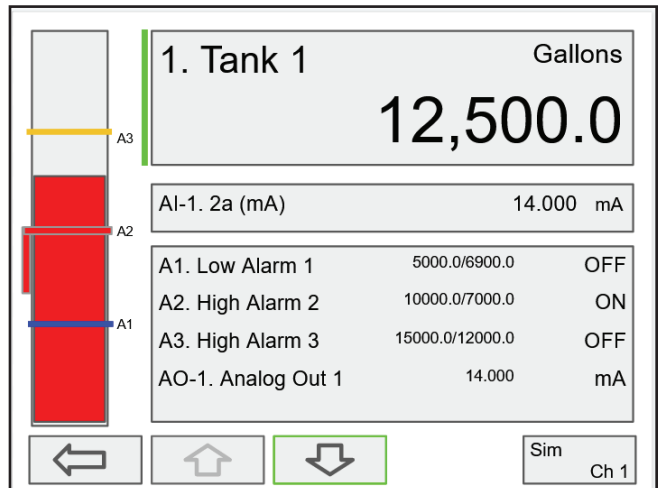
Alarm set points are indicated by horizontal lines.

Low & High Alarm Indication

If applicable, alarms may be acknowledged, and totals may be reset from the channel view screens. The alarm set points are indicated by a line at the corresponding value on the bargraph. Color selection for alarm conditions can be done in the Setup – Alarm menu or in the System – Display menu.



Active Low Alarm: Indicated by horizontal and vertical lines. The top of the vertical line is the reset point of the low alarm. The low alarm is indicated on the right side of the bargraph.



Active High Alarm: Indicated by horizontal and vertical lines. The bottom of the vertical line is the reset point of the high alarm. The high alarm is indicated on the left side of the bargraph.

More details and ordering information are available at
predig.com/pd9000

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