PRECISION DIGITAL

Water & Wastewater Instrumentation Solutions

Presenters

Joe Ryan
VP of Sales & Marketing

Joe brings more than 15 years of process signal experience in the design, support, manufacturing and marketing of process measurement and control devices. Joe has extensive field and support experience with 4-20 mA loops and devices.

Mark Mackinnon
Sr. Account Manager

Mark Mackinnon is a Senior Account Manager at Precision Digital. He has worked for over 30 years at companies that provide instrumentation solutions for municipal and industrial applications. Mark has extensive experience in specifying and applying a wide variety of process control instruments.

Agenda and Takeaways

01 Review Water and Wastewater Solutions

02 Discover Ways to Optimize Operations

03 Study Success Stories

Water & Wastewater Solutions

Water & Wastewater Solutions

Operators have used Precision Digital displays & controllers to optimize water and wastewater operations

Upgrade filter control consoles with digital displays that can be easily read from a distance

Totalize influent and effluent flow with resettable and non-resettable totals

Monitor parameters such as digester temperature, digester level, and open channel flow

Control and alternate pumps in lift station wet wells, clearwells, and in-plant sumps

Add display and alarm capabilities for chlorine, methane, hydrogen sulfide and other gas detection systems

Wirelessly transmit 4-20 mA signals from the field to the control room

Features Useful in Water & Wastewater Applications

Our product line includes useful features for water and wastewater applications

- UL listing for electrical safety
- Wide operating temperature range
- Sunlight readable displays for outdoor use
- NEMA 4X protection for installation in wet and dirty areas

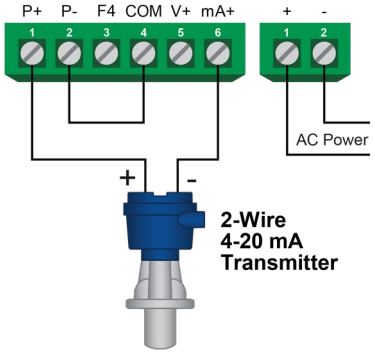
Optimizing Operations

Display And Alarm

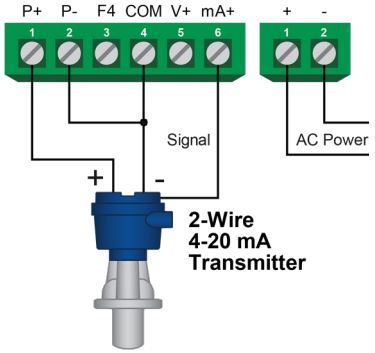
Pair the Light/Horn with a Precision Digital meter to create a convenient display and alarm system for water and wastewater operations.

- The light/horn can be powered by the meter, which provides some cost savings and simplifies wiring by reducing the number of devices in the loop
- Available in various colors
- We can drill the holes onto the enclosure for light/horn and reset button

Power Up The Transmitter



2-Wire Transmitter Connections



3-Wire Transmitter Connections

(Provides up to 200 mA)

A built-in, isolated 24 VDC power supply to power up the transmitter is available on all our line-powered meters.

- Eliminates the need for an external power supply
- Provides some cost savings
- Simplifies wiring by reducing the number of devices in the loop

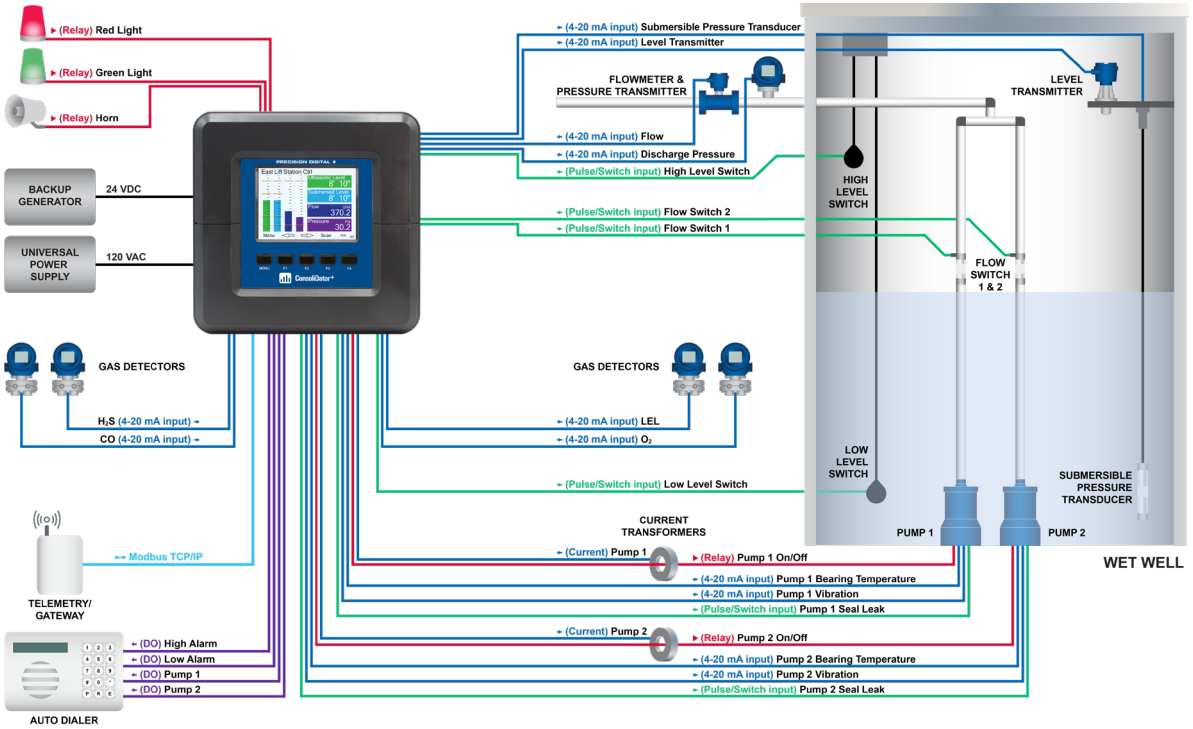
Lift Station Control

All sensors, control logic and communication requirements for lift station operation can be consolidated into one user-friendly device, the ConsoliDator+

- It provides clear process visibility, simple operation and dependable reliability

Model:
PD9000-GP-8PI-16AI-5RY-E

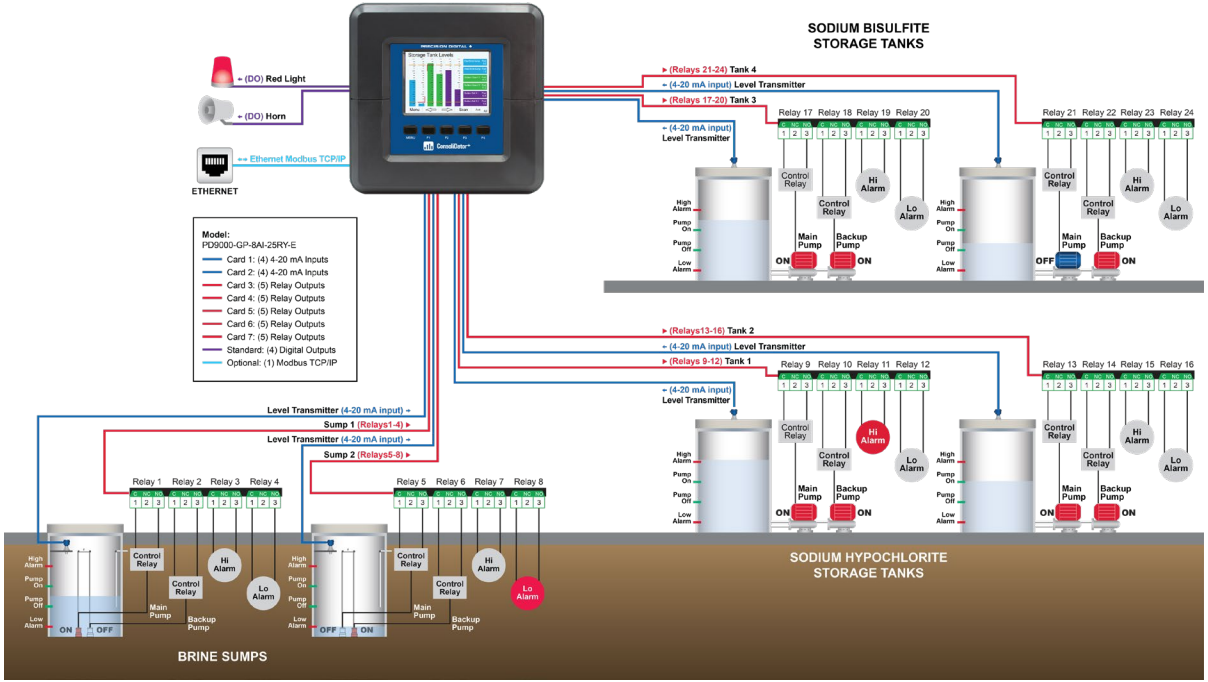
- Card 1: (4) Pulse/Switch Inputs
- Card 2: (4) Pulse/Switch Inputs
- Card 3: (4) 4-20 mA Inputs
- Card 4: (4) 4-20 mA Inputs
- Card 5: (4) 4-20 mA Inputs
- Card 6: (4) 4-20 mA Inputs
- Card 7: (5) Relay Outputs
- Standard: (4) Digital Outputs
- Optional: (1) Modbus TCP/IP



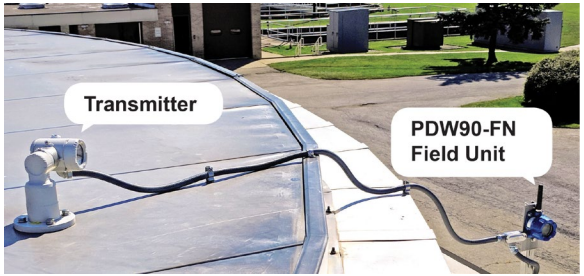
Multi-Pump Control And Alternation

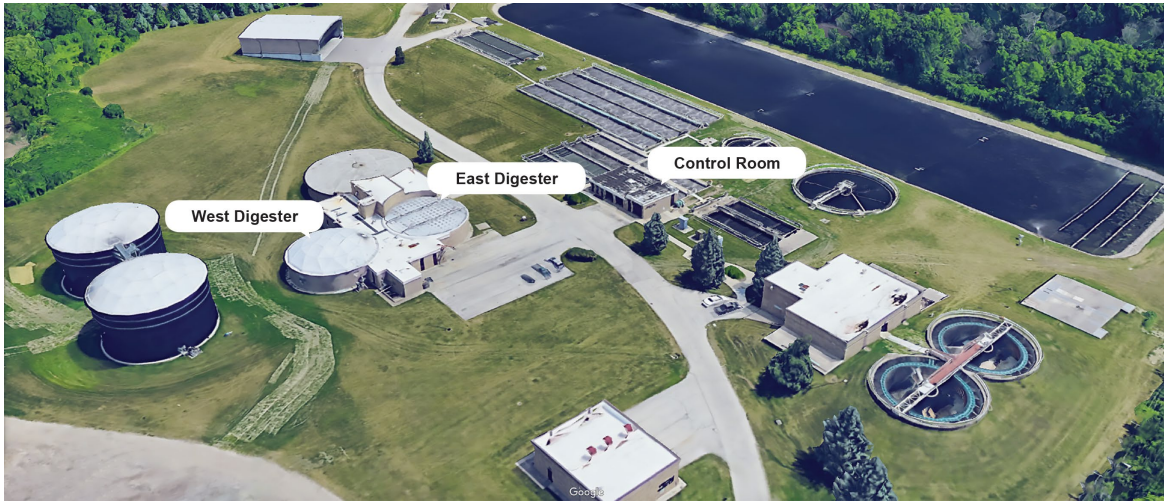
Monitor and control multiple storage tank levels and pump chemicals to wastewater processes with the ConsoliDator+

- All 4-20 mA inputs from level transmitters are isolated and powered by the ConsoliDator+
- 24 relays provide high and low level alarms and perform pump alternation for two pumps per tank
- Digital outputs turn on a red light and 85 dB horn when alarm occurs
- Data is sent to Operations Center via Ethernet Modbus TCP/IP.



Make Any 4-20 mA Level Transmitter A Wireless Device





Our wireless solutions made it feasible to connect devices located across a wastewater treatment plant

- A PDW90 wireless system was installed to get two digester levels back to the control room located across a parking lot
- The level transmitter sends the signal to a field unit, which then sends that signal to the base station lin the control room
- The base station receives the signal and retransmits it to be displayed on two PD6602 loop-powered process meters

Success Stories

Filter Console Upgrades

Old, hard to see digital panel meters on filter consoles have been replaced with the Trident X2 1/8 DIN digital panel meter

- Featuring a 1.2" (30.5 mm) display, twice the size of the older meters
- Super bright LEDs are visible in any lighting condition including in direct sunlight
- UL Listed with a NEMA 4X front

Level in Feet and Inches at Water Booster Pump Station

A water booster pump station had level transmitters with difficult to read displays. In addition, the readings needed to be displayed in feet and inches, not a decimal.

- Two PD6001 feet and inches level meters installed in a PDA3411 enclosure display the tank level in feet, inches, and 8ths of an inch
- This is how the customer prefers to display their level measurements

Sump Level Monitoring and Pump Alternation

Pump alternation as well as visual and audible alarm indication were needed for a waste sump with a guided wave level transmitter at a pharmaceutical company.

- The Helios PD2-6000-6H7 powers the level transmitter and performs pump alternation
- The red light and horn provide high/low level alarm indications
- The huge display can be easily read from up to 100 feet

Wastewater Treatment Plant Tank Side Level Measurement

In need of tank side level indication for a transmitter mounted on top of a tank plus audible and visual alarm indication for high/low level conditions.

- A PD6001 feet and inches level meter in a PDA2301 enclosure was installed to monitor the tank level
- A MOD-LH light/horn provides visual and audible indication of alarms
- The PD6001 relays trigger the light/horn during high/low alarms

Lead-Lag Pump Alternation Control

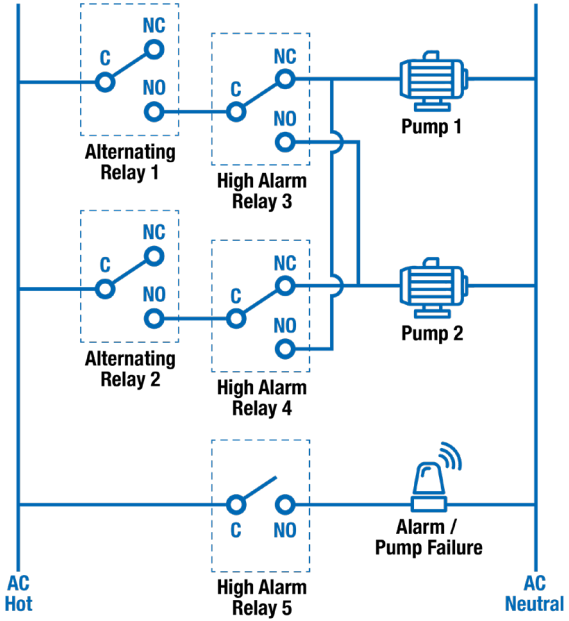
Two 10 MGD pumps installed in a 50 foot well needed to alternate operation for even pump wear

Challenges

- The pipe out of the well supports a max of 12 MGD
- Not possible to Operate both pumps at the same time even at partial flow conditions
- The system needs to provide a high-level alarm to indicate pump failure

Solution

- A PD6000-6R4 with four internal relays and a PDA1004 4-relay expansion module
- Two relays are programmed for pump alternation
- Two relays are programmed for high level alarm
- One relay is programmed to turn on a pump failure alarm



Wireless Monitoring of Level and Flow Measurements

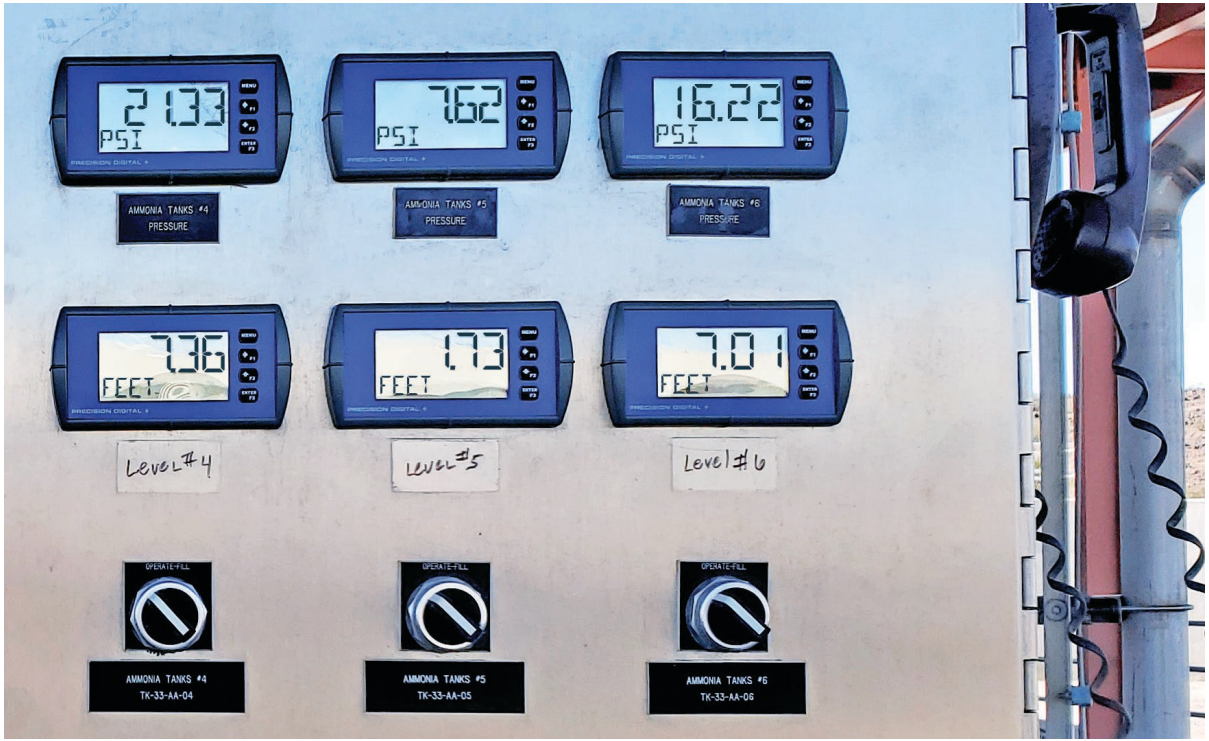
Level measurement of two sodium hypochlorite tanks and flow measurement from an influent pipe are sent to SCADA system wirelessly.

- Each level transmitter is connected to a field unit that wirelessly sends the 4-20 mA signals to a base station in the plant's office
- Two PD6000 meters display tank levels and transmit the 4-20 mA signals to the SCADA system
- The flowmeter connected to a field unit wirelessly transmits the 4-20 mA signal to the base station

Ammonia Storage Tanks at Water Treatment Plant

Three ammonia storage tanks each with level and pressure transmitters, needed tank side indication of both measurements.

- PD6602 loop-powered meters were installed to indicate level in feet and pressure in PSI.



Influent Open Channel Flow

A sunlight readable and easy to access display was needed for measuring influent flow from an ultrasonic transmitter in a Cipolletti weir.

- A PD6200 meter was installed with SunBright LEDs, two relays and an isolated retransmit of the 4-20 mA
- Flow rate is displayed on line 1 and total on line 2

Effluent Open Channel Flow

Local and easy to access indication was needed for an ultrasonic transmitter measuring effluent flow through a Parshall flume

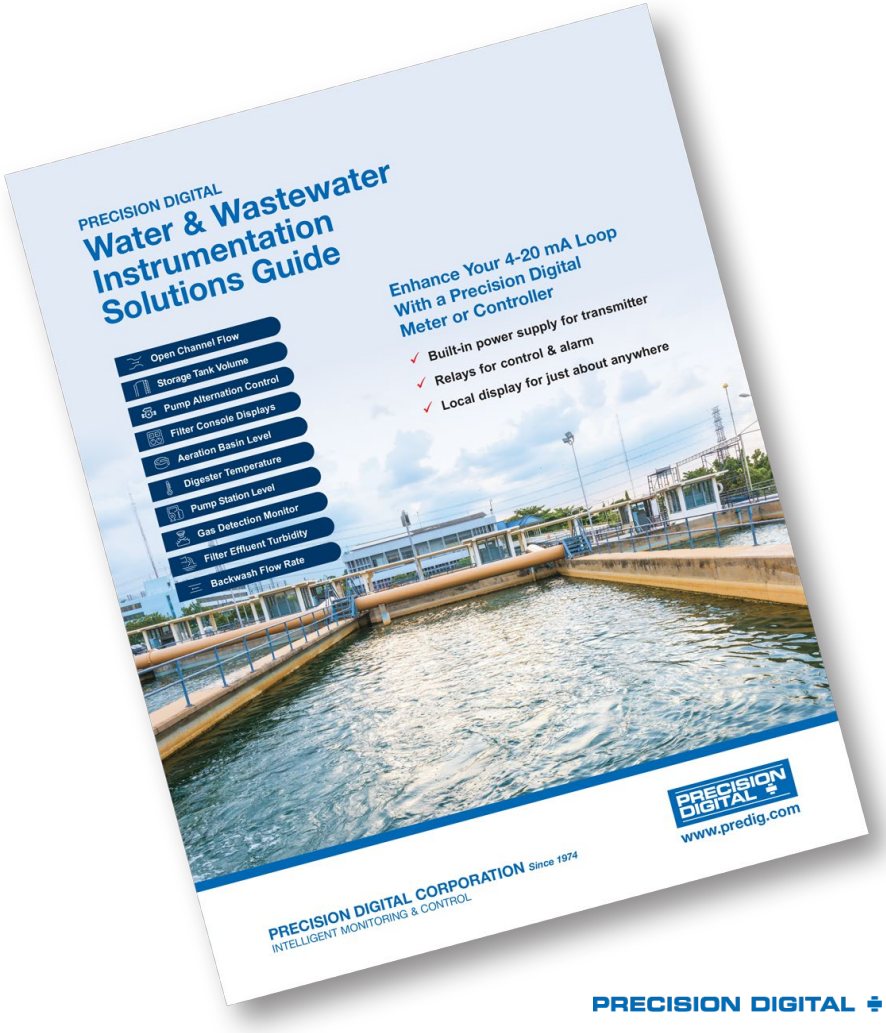
- A PD6622 loop-powered meter mounted in a PDA2811 NEMA 4X enclosure provides an eye level display of both flow rate and totalization of effluent from the plant
- The meter converts the signal to flow rate with the programmable exponent function

Get the Full Solutions Guide

Our Water & Wastewater instrumentation solutions guide is available for download or request a print copy online.

Download at **www.predig.com/solutions**

Request a print copy at **www.predig.com/Lit**



Questions?

If you have any questions or would like to discuss an application, then reach out to us.

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