Tank Farm Display & Control
Best Practices
Agenda, Objectives, & Takeaways

Understand the common challenges in tank level monitoring

Learn key considerations for picking the right tank side indicator or controller

Review various remote display solutions and features

Put it all together with real world applications
Common Challenges
Climbing up tanks

- The most serious issue in tank level monitoring is that climbing tanks is dangerous
- It is also time consuming and not much fun in the cold, heat, rain or snow
Built-in transmitter displays

• Even if the transmitter does have a display on it, it is still on top of the tank and impossible to read without climbing the tank.
The better solution – a remote display

• With a properly located remote display, efficiency and safety are never compromised
• Precision Digital’s level indicators and controllers provide instant and convenient access to your important processes
Picking the Right Indicator
1. It must display the right information

• Consider what is most useful to operators such as displaying 0-100%, feet & inches readings, metric readings, volume, height or large digits.

• Then choose a display accordingly
  • Dual-line display
  • Feet & inches display
  • Large display
  • Number of digits
2. Plan your mounting method

- A useful level indicator must be located somewhere accessible to the operator
- It should also be easy to install
- Level Indicators are available for:
  - Panel mounting
  - Field mounting
  - Wall or pipe mounting
  - Hazardous locations
3. Look for convenient power

- Tanks or silos are often isolated
- Running power to these locations can be costly and time consuming
- Consider what power source your remote level display will use based on what power may already be available
- Level indicators are available with:
  - 4-20 mA loop power
  - 85-265 VAC or VDC power
  - 9-36 VDC or VAC power
4. Consider it more than just a display

- Consider what other features your remote display has and how they can enhance your application.
- Alarm monitoring can be done with relays or open collector outputs with hi/lo alarming.
- Pump control can be done with meters featuring pump alternation control.
- Multivariable Modbus level displays can indicate interface level and temperature.
Questions?

- Please enter your questions in the ‘Questions’ chat window.
Tank level display & control solutions

Feet & inches level displays
- Unique displays, read & understood clearly in feet, inches, and 8\textsuperscript{th} or 16\textsuperscript{th} of an inch
- Most feature a tank height bargraph

Multi-pump controllers
- Great for sump pump applications
- Provide clear level indication, pump alternation control, and can power the transmitter

Loop-powered level meters
- Great for level applications where no other power is available

Multivariable transmitter displays
- Display level, temperature, and interface level
- Monitor multiple tanks
Feet & Inches level displays

PD6801 & PD6701
- Work with any 4-20 mA transmitter
- Tank height bargraph
- Loop-powered
- Open collector output for alarms

PD6830X & PD6730X
- Great for multivariable level transmitters
- Display level, temp, interface & more
- Monitor multiple tanks
- Tank height bargraph
- Two open collector outputs for alarms

PD8-6001 & PD6001
- Work with any 4-20 mA transmitter
- Bright LED displays, great for outdoors
- Provide power to the transmitter
- 2 or 4 form C internal relays

PD8-6081, PD6081 & PD6089
- Great for multivariable level transmitters
- Display level and volume
- Monitor multiple tanks
- Bright LED displays, great for outdoors
- Provide power to the transmitter
- 2 or 4 form C internal relays
Multi-pump controllers

**PD8-765 & PD765**
- Work with any 4-20 mA transmitter
- Up to 2 pump alternation control
- Bright LED displays, great for outdoors
- Huge display, can be seen from far away
- Provide power to the transmitter

**PD8-6000 & PD6000**
- Work with any 4-20 mA transmitter
- Up 8 pump alternation control
- Bright LED displays, great for outdoors
- Dual-line display
- Provide power to the transmitter

**PD8-6001 & PD6001**
- Work with any 4-20 mA transmitter
- Up 8 pump alternation control
- Bright LED displays, great for outdoors
- Provide power to the transmitter

**PD8-6081, PD6081 & PD6089**
- Great for multivariable level transmitters
- Feet & inches display
- Up 8 pump alternation control
- Monitor multiple tanks
- Bright LED displays, great for outdoors
- Provide power to the transmitter
Loop-powered level meters

**PD6801 & PD6701**
- Work with any 4-20 mA transmitter
- Feet & inches display
- Tank height bargraph
- Loop-powered
- Open collector output for alarms

**PD6800 & PD6700**
- Work with any 4-20 mA transmitter
- Tank height bargraph option
- Loop-powered
- Open collector output option for alarms
Multivariable Transmitter Displays

PD6830X & PD6730X
- Display level, temp, interface & more
- Monitor multiple tanks
- Tank height bargraph
- Feet & inches display
- Two open collector output for alarms

PD8-6081, PD6081 & PD6089
- Display level and volume
- Monitor multiple tanks
- Bright LED displays, great for outdoors
- Provide power to the transmitter
- 2 or 4 form C internal relays
Other important level features available

32-point linearization
• Available on most meters
• Great for linearizing level of elliptical tanks

Round horizontal tank feature
• Available on ProtEX-MAX & ProVu
• Enter height and diameter of tank with flat ends and automatically calculate volume

Pump alternation control
• Available on most meters
• Control up to 8 pumps

Dual-scale feature
• Available on select meters
• Display level in two scales (i.e. volume & percent)
• Both independently scaled and based on 4-20 mA signal
Real World Applications
PD6801 - Oil Refinery Level Indication in Feet & Inches

**Application**
- Tank farm in need of remote level displays for oil tanks
- No power readily available
- The installation is outdoors and in a hazardous area

**Solution**
- Two PD6801s
  - Loop-powered
  - F&I display with tank height bargraph
  - Explosion-proof enclosure
  - Agency approvals
PD6801 - Oil Refinery Level Indication in Feet & Inches

**Application**
- Commercial asphalt storage tank
- No power readily available
- The installation is outdoors

**Solution**
- One PD6701
  - Loop-powered
  - F&I display with tank height bargraph
  - Field mountable
  - NEMA 4X enclosure
Summary

- Identified the common challenges in tank level monitoring
- Learned key considerations for picking the right remote display
- Reviewed various remote display solutions and features
- Put it all together with real world applications
Q & A

• Please enter your questions in the ‘Questions’ window

• Apologies if we do not get to your question today. We’ll contact you offline with a response as soon as possible.
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• Pulse Input Meters and Controllers
• Loop-Powered Meters
• Digital Panel Meters
• Explosion-Proof Instruments
• Large Display Meters
• And more
thank you