Welcome to the Webinar

A Guide to Level Monitoring
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1 Common Problems in Level Indication
Climbing Up Tanks is Dangerous and a Waste of Time
Here is a Level Transmitter with a Display, but.....
Common Problems in Level Indication

Precision Digital Indicators and Controllers Are the Convenient and Safe Solution

- 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
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Level Indicators and Controllers
Level Indicators and Controllers

Solutions

- Feet & inches displays
  - Unique level displays, read and understood clearly in feet and inches
- 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
- Displays for multivariable level transmitters
  - Display level, temperature, and interface
Level Indicators and Controllers

Applications

- Tank Level Gauging
- Multi-Pump Control
- Sump Level Indication
- Lift & Pump Station Control
- Silo Height Displays
- Round Horizontal Tank Monitoring
PD6801 & PD6701
Loop-Powered
Feet & Inches Level Indicators

- Display level in feet and inches
- Works with any 4-20 mA level transmitter
- Big display with wide viewing angle
- 20-segment tank height bargraph
- 32-point linearization
- Open collector Hi or Lo alarm
- Configure meter using SafeTouch® through-window buttons
- Ex-proof or NEMA 4X field mount
PD6801 & PD6701
Feet & Inches Level Indicators Display Features

- Feet Display
  - 0-399

- Inches Display
  - 0-11

- HI / LO Alarm Indicators

- 20-Segment Bargraph

- 0.6" (15.24 mm) high Digits

- 7-Character
  - 0.4" (10.2 mm) high Display

- 16th or 8th of an Inch Display
PD6801 & PD6701
How the Feet & Inches Displays Work
PD6830X & PD6730X
Feet & Inches Modbus Scanners

- Great for multi-variable Modbus® level transmitters or for multiple tanks
- Display up to 16 Modbus registers
- Display level in feet and inches
- Display level, temp, interface & more
- Master, slave, or snooper mode
- 32-point linearization
- Configure & monitor from PC
- Two open collector alarm outputs
- Field configuration using SafeTouch® through-window buttons
- Ex-proof or NEMA 4X field mount
- Available in 5 digit version also
PD6830X & PD6730X
Scanning 3 Registers on a Multivariable Level Transmitter
PD6800 & PD6700
Level Meters

- Display level in volume (i.e. gallons, liters) or height (metric with decimal)
- Loop-powered. Great for level applications where no other power is available
- Dual-line display
- 7-digit alphanumeric tag names on lower display
- 32-point linearization for non-linear tanks
- Configure meter using SafeTouch® through-window buttons
- Ex-proof or NEMA 4X field mount
PD6000 & PD8-6000
Pump Controllers

- Great for sump pump applications
- Multi-pump alternation control for up to 8 pumps
- Display the measured input in two scales (i.e. gallons & percent / height)
- 24 VDC @ 200 mA power supply available to power the level transmitter
- 2 or 4 form C internal relays
- 4-relay expansion module available
- 4-20 mA output with isolated 24 VDC @ 40 mA power supply
- Configure meter using SafeTouch® through-glass buttons (PD8)
- Ex-Proof or 1/8 DIN panel mount
Level Indicators and Controllers

PD765 & PD8-765 Pump Controllers

- Very popular in sump pump applications
- Pump alternation control for up to 2 pumps
- 24 VDC power supply available to power the level transmitter
- Configure meter using SafeTouch® through-glass buttons (PD8)
- Huge, easy-to-read display
- Maximum/minimum display
- Ex-Proof or 1/8 DIN panel mount
Level Indicators and Controllers

PD6081
Feet & Inches Modbus Scanner

- Perfect for monitoring level in multiple tanks
- Scans 16 Modbus variables
- Accepts two 4-20 mA inputs
- Display level in feet and inches
- Great for multi-variable transmitters
- Display level, interface, temperature
- Master, slave, or snooper mode
- 4-20 mA analog output option (up to 3)
- Isolated 24 VDC @ 200 mA transmitter power supply
- 2 or 4 form C internal relays
- **Forget Modbus; use it as a 4-20 mA input feet and inches meter!**
PD6089 & PD8-6081
Feet & Inches Modbus Scanners

- Perfect for level monitoring of multiple tanks
- Display level in feet and inches
- Great for multi-variable transmitters
- Display level and volume
- On-board RS-485 Modbus Comm.
- Master, slave, or snooper mode
- Up to 3 4-20 output option (PD6089)
- Isolated 24 VDC @ 200 mA transmitter power supply
- 2 or 4 form C internal relays
- Configure meter using SafeTouch® through-glass buttons (PD8)
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Level Features
Dual-Scale Feature

- The PD6000 and PD8-6000 can display the 4-20 mA signal in two scales
- Great for displaying level in two ways (i.e. volume & percent)
- Both displays are independently scaled and are based on the 4-20 mA input signal.
Level Features

Dual-Scale Feature (More Uses)

- Great for displaying level in two ways (i.e. volume & height)
Dual-Input Meter
PD6060 & PD8-6060

- Display two 4-20 mA signals on one meter
- Both inputs can have independent tags
- Control up to four internal relays and four external relays
- Up to three 4-20 mA outputs
Level Features

Volume Measurement in Non-linear Tanks

Round Horizontal Tank Feature
- Can be easily set up using MeterView Pro software
- Select RHT function from Select Menu
- Enter tank diameter and length in cm or inches

Multi-point Linearization
- Up to 32 linearization points available in most meters
- Easily enter points using MeterView Pro software (ProVu and ProtEX-MAX models)
  - Import from or export to Excel spreadsheet
Pump Alternation Control

Relay #4 turns the main pump on at 6000 gallons and turns it off at 1000 gallons.
Level Features

Pump Alternation Control

With the Pump Alternation feature activated, the next time the level reaches 6000 gallons, relay #3 transfers and starts the backup pump.
Pump Alternation Control

If the backup pump is not able to keep up, and the level reaches 7000 gallons, relay #4 transfers and starts the main pump as well.
Pump Alternation Control

Relay #2 trips the High Level Alarm at 7500 gallons and resets at 6900 gallons.
Pump Alternation Control

Relay #1 trips the Low Level Alarm at 495 gallons and resets at 750 gallons.
Is this the most beautiful display for level applications?

Yes!
Choosing the Right Level Indicator
Choosing the Right Level Indicator

1. 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, silos, sumps, wells, and other common level measurement sites 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:
  - 85-265 VAC or VDC power
  - 9-36 VDC or VAC power
  - 4-20 mA loop 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.
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Real Success Stories
PD8-6000 – Crude Oil Holding Tank Level Monitoring
PD8-765 – Remote Oil Tank Level Monitoring
PD8-765 – Level Indication & Pump Control at Oil Refinery
PD6801 – Level Indication at Chemical Plant
PD6801 - Oil Refinery Level Indication in Feet & Inches

Real Success Stories
PD765 X2 – Salt Water Tank Level at Truck Loading Stations
PD6701 – Commercial Asphalt Storage Tank Level Monitoring
Thanks for Attending this Webinar

Tank Side Level Monitoring