Non-Contacting Point Level Detection and Pump Control Sensor

Pointek™ ULS 200

Setting a New World Standard

Y2K Compliant

MILLTRONICS

Key Pointek Features and Benefits

Markets

- Food and Beverage
- Power
- Grain / Milling
- Pulp and Paper
- Tank Storage
- Manufacturing Processes
- Water and Wastewater
- Aggregate, Cement

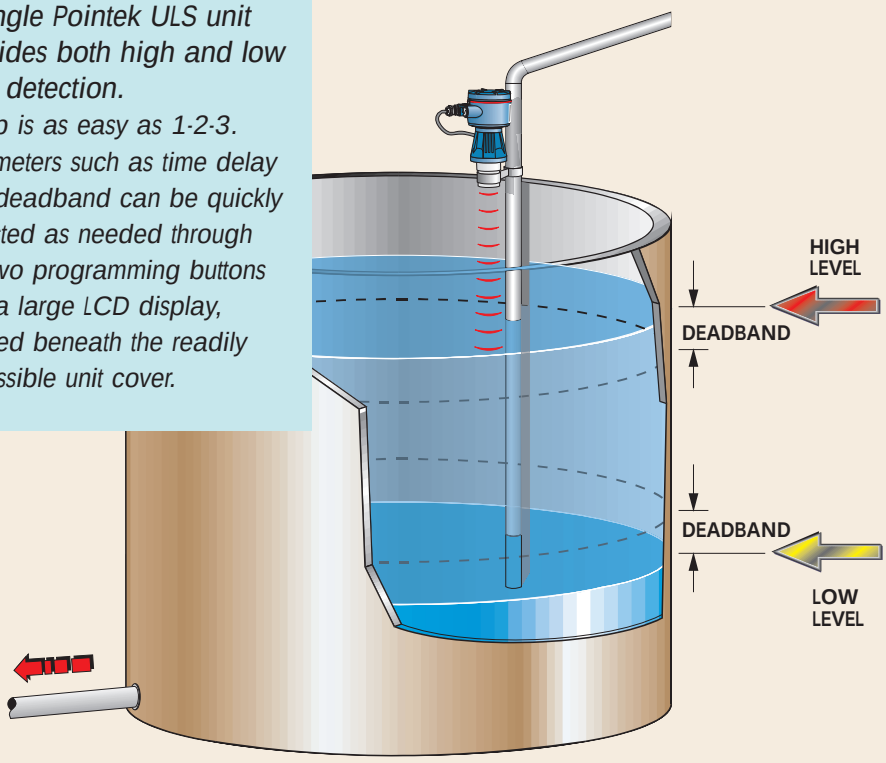
Application Versatility

- Level Detection
- Proximity Detection
- Overfill Detection
- Presence / Absence Detection
- Simple Single / Dual Pump Control
- For Sanitary 3A Applications

- Non-contacting point level detection on liquids, slurries and bulk solids for versatile, low maintenance operation
- Switching ranges: Liquids / Slurries 0.25m to 5.0m (0.8 ft. to 16.4 ft.). Bulk Solids 0.25m to 3.0m (0.8 ft. to 9.8 ft.)
- One output can be configured to indicate loss of echo – adding to the unit's reliability
- Simple, two-button set-up
- Multi-segment graphic on LCD display shows operation status

- Type 6 NEMA6 / IP67 polycarbonate or aluminum enclosure for aggressive environments
- Easy to install
- Self-cleaning sensor minimized maintenance / downtime
- ac or dc power supply
- Wiring is simple through the cable entry gland
- Built-in temperature compensation for constant accuracy in variable conditions
- Sanitary version available, with an industry standard flange option

A single Pointek ULS unit provides both high and low level detection.
Set-up is as easy as 1-2-3. Parameters such as time delay and deadband can be quickly adjusted as needed through the two programming buttons and a large LCD display, located beneath the readily accessible unit cover.



Reliable, Adaptable and Affordable Dual Switch Point Level Detection

Left: Standard Model
Below: Sanitary Model with Flange

Pointek ULS ultrasonic non-contacting point level sensors represent an important breakthrough in reliable, low cost point level detection and simple pump control.

As part of the Milltronics family of high performance level measurement instruments, the new Pointek ULS 200 reflects Milltronics' continuing commitment to supply the widest range of level detection solutions across a broad spectrum of measurement technologies.

Unmatched Performance

This low cost, ultrasonic switch is capable of non-contacting detection of two distinct levels on liquids, slurries and solids. It works effectively on bulk solids applications up to 3 metres (9.8 ft.) and on liquids and slurries up to 5 metres (16.4 ft.) ... without ever touching the process. Unlike contacting point level devices, there is no material build-up or plugging on the sensor, eliminating many problems associated with invasive mechanical devices such as bubblers and floats.

Its rugged integrated design which combines both the sensor and the electronics in one durable package, and absence of moving parts, provides virtually maintenance-free operation.

The bottom line? The Pointek ULS 200 delivers superior performance while dramatically reducing your maintenance, downtime and equipment replacement costs.

Easy to Program, Easy to Use

With the non-contacting ULS 200, there are no rods or extensions to limit flexibility. If there is a change in process application specifications, set-points can be modified on the spot. The unit is programmable using a simple, two-button set-up for high-high, high-low and low-low level detection / alarms. Each switch point is infinitely variable over the specified range.

Installation Couldn't be Simpler

Just mount the compact Pointek ULS 200 unit on the top of the vessel with a standard 2" fitting, connect it to the appropriate ac or dc power supply, connect the outputs, set detection levels using the two built-in programming keys – and that's it! No need to shut down the process or fill / empty the vessel. The sanitary model is easy to remove and clean ... a key requirement for food and beverage processes.

Wide Application Versatility

To meet the need for configurations that are effective in standard processes as well as hazardous applications, the Pointek ULS 200 enclosure can be ordered in polycarbonate or aluminum with a chemically-resistant Tefzel® or Kynar-Flex® sensor. This extends the unit's usage to chemical, petrochemical and water and wastewater industries, where more rigorous approval levels are required.

When compared to other point level detection products, the Pointek ULS 200, with its unique and powerful features, delivers a cost effective solution at an extremely low cost of ownership.

Designed to Deliver Maximum Application Flexibility

Chemical Storage Application in the Food Industry

A three step cleaning regimen is used in this application to clean all pipework and vessels used in the manufacture of ice cream products. The non-contacting Pointek ULS 200 is mounted on stainless steel tanks containing various water and chemical combinations and detects two different levels. One output controls an inlet valve while the second controls a pump. The Pointek ULS unit detects both high and low levels within a tolerance set by the deadband, and can be easily re-programmed at any time.

Automated Cement Plant Application

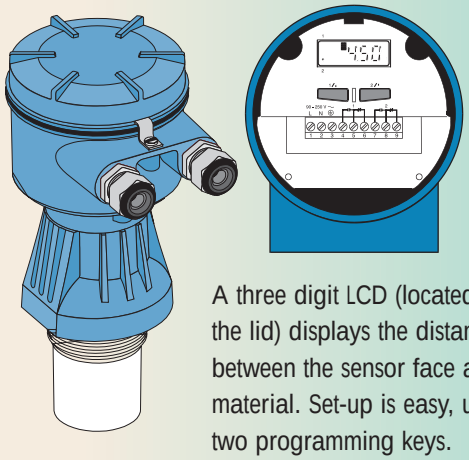
In this application, raw gypsum is fed from a hopper onto a conveyor belt carrying material to the crusher. The hopper feed frequently becomes blocked, reducing or halting the flow of material. The non-contacting Pointek ULS 200, mounted on a bracket above the conveyor belt, is pre-set to detect a low level condition – which results in a signal sent to the central control panel. This, in turn, activates a vibrator on the side of the hopper to clear the blockage. The Pointek ULS point level unit replaced a paddle switch, and resulted in a significant reduction in downtime, maintenance and equipment replacement costs.

Porcelain Manufacturing Application

The level of porcelain slurry (slip) in the vessel is maintained within two points (on / off, high / low) by the Pointek ULS 200, which controls the opening and closing of a valve. The mixture is agitated in the vessel and then dosed out in batches to the manufacturing process.

Design and Construction Highlights

- The use of ultrasonic technology for point level detection means that there is no need to specify the length of the wetted part on installation. If your application specification changes, simply adjust the Pointek ULS settings. No modification or replacement units are required. (Standardization on Pointek ULS for all your applications could mean significant savings.)
- The non-contacting Pointek ULS 200 is virtually immune to many of the problems inherent to most contacting level detection devices – e.g. material build-up – and is unaffected where there is a presence of suspended solids in a liquid application.
- One unit can provide both high and low level detection which results in a reduced initial investment as well as a low ongoing cost of ownership. The two adjustable switch outputs are programmable for high-high, high-low and low-low level alarms and / or simple pump control.
- With the Pointek ULS 200, changes in application requirements can be accommodated “on the fly”. Settings are modified by the user with the push of a button.



A three digit LCD (located under the lid) displays the distance between the sensor face and the material. Set-up is easy, using two programming keys.

The Sonic Intelligence® Advantage

The Pointek ULS ultrasonic sensor continuously emits sonic pulses that are reflected from the target surface. By measuring the time delay between transmitted and reflected pulses, levels are constantly monitored. To optimize accuracy, the Pointek ULS output is automatically temperature compensated before conversion to distance.

Advanced echo processing techniques of Sonic Intelligence® software ensure consistently reliable data from the Pointek ULS. The unit not only differentiates between real echoes and echoes generated by acoustical or electrical noise, but can also capture weak “true” echoes in hostile environments where extreme hot, cold or steamy conditions can make other level detection systems inoperable.

Specifications

Operations

Detection Range	Liquids: 0.25m (0.8 ft.) to 5m (16.4 ft.) Solids: 0.25m (0.8 ft.) to 3m (9.8 ft.)
Modes of Operation	High, low, high-high, high-low, low-low level indication Pump Control: single pump control with one alarm or failsafe or simple dual pump control only
Repeatability	0.25% of full range
Resolution	3mm (0.1")
Echo Processing	Patented Sonic Intelligence® software
Memory	Non-volatile EEPROM
Process Pressure	Vent to atmosphere
Sensor Beam Angle	10° at -3dB boundary
Ambient Temperature	-40° to 60°C (-40° to 140°F). For metal mounting: -20° to 60°C (-5° to 140°F)
Process Temperature	-40° to 60°C (-40° to 140°F). For metal mounting: -20° to 60°C (-5° to 140°F)
Process Temp. Compensation	Built in to compensate for fluctuations over the operating range

Outputs

ac Version	2 form "C" (SPDT) contacts, rated 5A at 250 Vac non-inductive
dc Version	2 non-polarized transistor switches rated 48 Vdc, 100 mA maximum or 2 form "C" (SPDT) contacts, rated 5A at 48 Vdc
Deadband	Independently adjustable deadbands

Display Information

LCD displays three 9mm (0.35") digits for programming distance between sensor face and material.
Multi-segment graphic for operation status.

Programming

2 keys

Installation

Power Supply		18 to 30 Vdc, 3W maximum or 100 to 230 Vac, 12VA (5W) maximum
Wiring Termination		Terminal block: 2.5mm² (14 gauge) solid / 1.5mm² (16 gauge) stranded maximum
Cable Entry		Polycarbonate enclosure – 2 connections: 1/2" NPT or PG 13.5 Aluminum enclosure – 2 connections: 1/2" NPT or PG 13.5
Sensor Mounting:	Threaded	2" NPT, 2" BSP or PF2. Optional flange adapter to 3" ANSI, DIN 65PN10 and JIS 10K3B
	Sanitary	4" 3A compliant tri-clamp

Integrated Enclosure

Electronics

Material	Polycarbonate or optional epoxy coated aluminum with gasket
Ingress Protection	Type 6 / NEMA 6 / IP67
Sensor Material	Tefzel® or Kynar-Flex®

Environmental

Location	Indoor / outdoor
Altitude	2000m (6562 ft.) maximum
Installation Category	II
Pollution Degree	4

Shipping Weight

Polycarbonate enclosure: 1.6kg (3.52 lbs.)
Aluminum enclosure: 2.3kg (5.06 lbs.)

Approvals

CE. 3A. CSA NRTL/C. Pending: FM, general purpose
For hazardous applications: CSA. Pending: FM, CENELEC.

Specifications are subject to change without notice.
Y2K Compliant - Year 2000 Compliant

Representative

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