

SITRANS L Level instruments

Point level measurement - Ultrasonic switch

Pointek ULS 200

Overview



The Pointek ULS 200 is an ultrasonic non-contacting switch with two switch points for level detection of bulk solids, liquids and slurries in a wide variety of industries; ideal for sticky materials.

Benefits

- 2 switch outputs for high-high, high, low and low-low level alarms or pump up/pump down control
- Integral temperature compensation
- AC or DC power supply
- Electronics provided with fail-safe function
- Threaded and 3A approved sanitary fitting clamp process connections
- Polycarbonate or aluminum enclosures, Type 6/NEMA 6/IP67
- Easy, two-button programming

Application

The measuring range for bulk solids is max. 3 m (9.8 ft) and 5 m (16.4 ft) for liquids and slurries. Unlike invasive contacting devices, there is no material buildup on the sensor.

The level switch has a rugged design, combining the transducer and electronics in one durable device. It has no moving parts and is virtually maintenance-free.

The transducer, available in ETFE or PVDF copolymer, is inert to most chemicals. This means the device can be used in the chemical, petrochemical, water and wastewater industries. A sanitary version of the ULS 200, with an industry standard flange option, is easy to remove from the application for cleaning. It thus satisfies the prerequisites for use in the food, beverage and pharmaceutical industries. The Pointek ULS 200 delivers superior performance while reducing maintenance, downtime and equipment replacement costs.

- Key Applications: liquids, slurries, fluid materials, plugged chute detection, chemical industry

Design

Installation

The Pointek ULS 200 should be mounted in an area that is within the temperature range specified and that is suitable to the enclosure rating and materials of construction. The cover should be accessible to allow programming, wiring and display viewing.

It is advisable to keep the Pointek ULS 200 away from high voltage or current runs, contactors and SCR control drives.

Locate the Pointek ULS 200 so that it has a clear sound path perpendicular to the material surface. The sound path should not intersect the fill path, rough walls, seams, rungs etc.

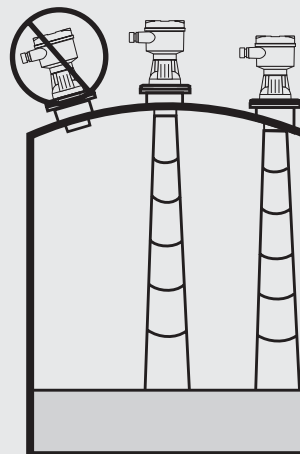
Mounting and Interconnection

The Pointek ULS 200 is available in three thread types: 2" NPT, 2" BSPT or PF2 and can be fitted with the optional 75 mm (3") flange adapter for mating to 3" ASME, DN 65, PN 10 and JIS 10K 3B sized flanges.

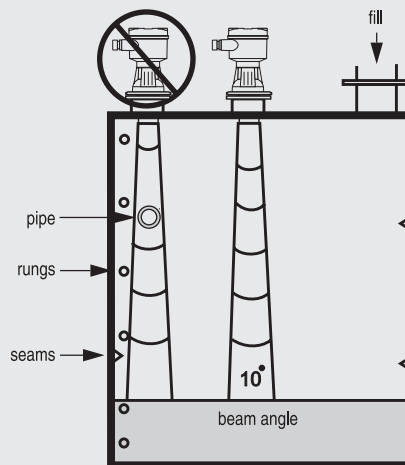
Separate cables and conduit may be required to conform to standard instrumentation wiring or electrical codes.

Configuration

Parabolic Mounting



Flat Mounting and Beam Angle



Pointek ULS 200 Mounting

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Technical specifications

Mode of operation

Measuring principle Ultrasonic level switch

Measuring range

Measuring range in liquids 0.25 to 5 m (0.8 to 16.4 ft)

Measuring range in bulk solids 0.25 to 3 m (0.8 to 9.8 ft)

Output

AC Version (relay) 2 SPDT Form C contacts rated 5 A at 250 V AC, resistive load

DC Version (relay) 2 SPDT Form C contacts rated 5 A at 48 V DC

DC Version (transistor) 2 switches, rated max. 100 mA, 48 V DC

Accuracy

AC/DC version

- Resolution 3 mm (0.1")

- Repeatability 0.25% of measuring range

Rated operation conditions

Installation conditions

- Location Indoors/outdoors

- Beam angle 12°

Ambient conditions

- Ambient temperature -40 to +60 °C (-40 to +140 °F)

- If mounted in metal threads -20 to +60 °C (-5 to +140 °F)

Medium conditions

- Process pressure 0.5 bar (7.25 psi) max.

Design

Material Polycarbonate or epoxy-coated aluminum with gasket

Weight Approx. 1.5 kg

Transducer material PVDF copolymer

Threaded mounting 2" NPT, 2" BSPT or 2" G

- Optional flange adapter For 3" ASME, DN 65, PN 10 and JIS 10 K3B

Sanitary mounting 4" sanitary fitting clamp according to 3A guidelines

Power supply

AC version 100 to 230 V AC, ± 15%, 50/60 Hz, max. 12 VA, 5 W

DC version 18 to 30 V DC, 3 W

Displays and controls

Display LCD, three digits, 9 mm (0.35") high, for display of distance between sensor face and material, multisegment graphic for operating state

Memory EEPROM, non-volatile

Programming 2 keys

Electronics/enclosure

Connection: terminal block, max. 2.5 mm² (14 AWG) solid/1.5 mm² (16 AWG) stranded

Degree of protection IP67/Type 6/NEMA 6

Cable inlet 2 x ½" NPT or 2 x PG 13.5

Certificates and approvals

- CE (EMC certificate available on request), CSA_{NRTL/C}, FM
- CSA/FM Class I, Div. 1, Groups A, B, C, D; Class II; Groups E, F, G; Class III
- ATEX II 2G EEx md II C T5
- 3A Approval

Selection and Ordering data

Order No.

Pointek ULS 200

Ultrasonic non-contacting switch with two switch points for level detection of bulk solids, liquids and slurries in a wide variety of industries; ideal for sticky materials

Power supply

24 V DC, relay output

24 V DC, transistor output

100 to 230 V AC, relay output

Approvals

CE, ATEX II 2G EEx md IIC T5, SAA¹⁾ (Note: Due to ATEX regulations, one manual is shipped with approval option C.)

CE, CSA Class I Div. 1, Class II Div. 1, Class III²⁾

CE, FM Class I Div. 1, Class II Div. 1, Class III²⁾

CE, CSA_{NRTL/C}, FM, 3A

CE, CSA Class I Div. 2, Class II Div. 2³⁾

Transducer/Process connection

ETFE, 2" NPT (ANSI/ASME B1.20.1)

EFTE, 2" BSPT (EN 10226-1)

EFTE, 2" G (EN ISO 228-1)

PVDF copolymer, 2" NPT (ANSI/ASME B1.20.1)

PVDF copolymer, 2" BSPT (EN 10226-1)

PVDF copolymer, PF2 (JIS B 0202)

PVDF copolymer, 4" sanitary mounting, 3A approved⁴⁾

Enclosure/cable inlet

Polycarbonate

• Cable inlet PG 13.5

• Cable inlet ½" NPT

Aluminum

• Cable inlet PG 13.5

• Cable inlet ½" NPT

Instruction manual

Additional Multi-language Quick start manual

Note: Due to ATEX regulations, one Quick start manual is included with every product.

This device is shipped with the Siemens Milltronics manual CD containing the complete instruction manual library.

Accessories

Tag, stainless steel, 12 x 45 mm (0.47 x 1.77"), one text line, suitable for enclosures

Universal Box Bracket Mounting Kit

3" ASME, DN 65, PN 10, JIS 10K 3B ETFE Flange adapter for 2" NPT

3" ASME, DN 65, PN 10, JIS 10K 3B ETFE Flange adapter for 2" BSPT

2" BSPT Locknut, plastic

2" NPT Locknut

4" sanitary mounting clamp

Spare Parts

Polycarbonate Lid

Aluminum Lid

1) Available with enclosure/cable inlet option 4 only

2) Available with enclosure/cable inlet option 4 only and process connection options A and E only

3) Available with Enclosure/cable inlet options 2 and 4 only

4) Available with Approval option H only

C) Subject to export regulations AL: N, ECCN: EAR99

C) 7ML1510-

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C) 7ML1998-1XB81

7ML1930-1AC

7ML1830-1BK

7ML1830-1BT

7ML1830-1BU

7ML1830-1DQ

7ML1830-1DT

7ML1830-1BR

7ML1830-1LG

7ML1830-1LH

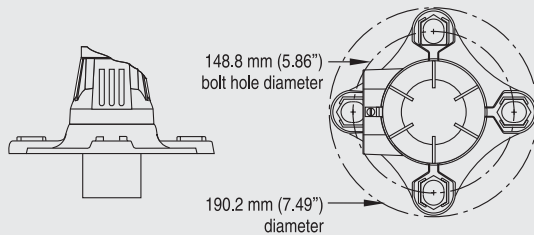
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Options

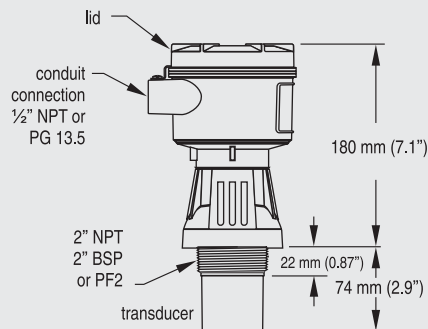
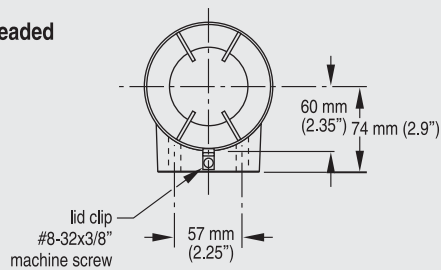
Flange adapter for mating 2" NPT or 2" BSP process connections to 3" ANSI, DIN 65 PN10, and JIS 10K 3B flanges



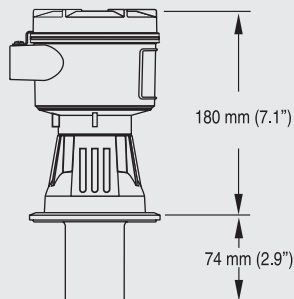
Pointek ULS 200 Optional Flange Adapter

Dimensional drawings

Threaded



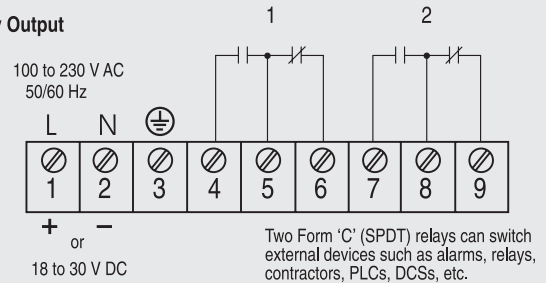
Sanitary



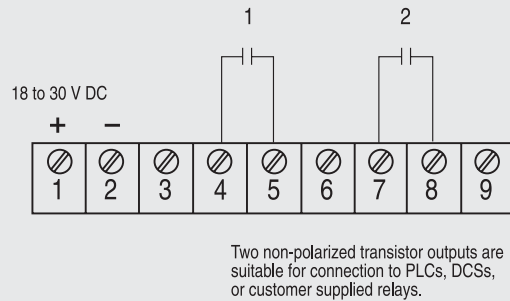
Pointek ULS 200 dimensions

Schematics

Relay Output



Transistor Output: DC version only



Pointek ULS 200 connections