

Level Measurement

Point level measurement

Ultrasonic non-contacting switch

Pointek ULS200

Overview



The Pointek ULS200 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 sanitary fitting clamp process connections
- Polycarbonate enclosure, 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 ULS200, 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 ULS200 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 ULS200 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 ULS200 away from high voltage or current runs, contactors and SCR control drives.

Locate the Pointek ULS200 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 ULS200 is available in three thread types: 2" NPT, R 2" (BSPT), EN 10226 or PF2 and can be fitted with the optional 75 mm (3 inch) 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.

Level Measurement

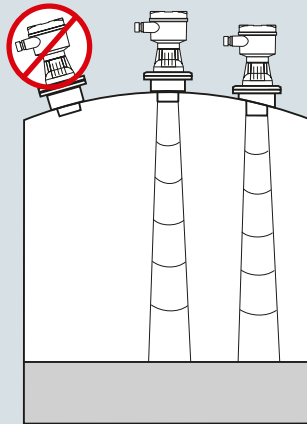
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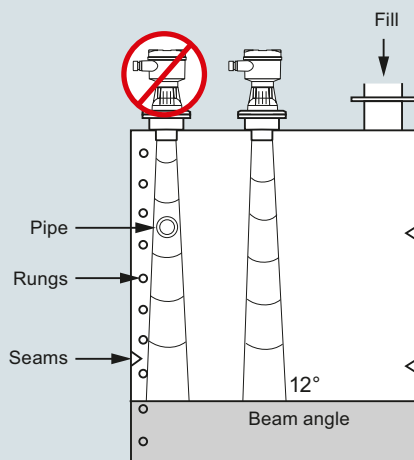
Pointek ULS200

Configuration

Parabolic mounting



Flat mounting and Beam angle



Pointek ULS200 mounting

Technical specifications

Mode of operation

| | |
|---------------------|-------------------------|
| Measuring principle | Ultrasonic level switch |
|---------------------|-------------------------|

Measuring range

| | |
|--------------------------------|--------------------------------|
| Measuring range in liquids | 0.25 ... 5 m (0.8 ... 16.4 ft) |
| Measuring range in bulk solids | 0.25 ... 3 m (0.8 ... 9.8 ft) |

Output

| | |
|-------------------------|---|
| AC Version (relay) | 2 SPDT Form C contacts, rated 5 A at 230 V AC or 30 V DC, resistive load; rated 1 A at 48 V DC resistive load |
| DC Version (relay) | 2 SPDT Form C contacts, rated 5 A at 30 V DC, resistive load; rated 1 A at 48 V DC resistive load |
| DC Version (transistor) | 2 switches, rated max. 100 mA, 48 V DC |

Accuracy

| | |
|-----------------|---------------------------|
| AC/DC version | |
| • Resolution | 3 mm (0.1 inch) |
| • Repeatability | 0.25 % of measuring range |

Rated operation conditions

| | |
|-------------------------------|----------------------------------|
| Installation conditions | |
| • Location | Indoors/outdoors |
| • Beam angle | 12° |
| Ambient conditions | |
| • Ambient temperature | -40 ... +60 °C (-40 ... +140 °F) |
| • If mounted in metal threads | -20 ... +60 °C (-5 ... +140 °F) |
| Medium conditions | |
| • Process pressure | 0.5 bar (7.25 psi) max. |

Design

| | |
|---------------------------|--|
| Material | Polycarbonate with gasket |
| Weight | Approx. 1.5 kg (3.3 lb) |
| Transducer material | PVDF or ETFE copolymer |
| Threaded mounting | 2" NPT [(Taper), ANSI/ASME B1.20.1] R 2" [(BSPT), EN 10226] or G 2" [(BSPP), EN ISO 228-1] |
| • Optional flange adapter | For 3" ASME, DN 65, PN 10, and JIS 10 K3B |
| Sanitary mounting | 4" sanitary fitting clamp |

Power supply

| | |
|------------|---|
| AC version | 100 ... 230 V AC, ± 15 %, 50/60 Hz, max. 12 VA, 5 W |
| DC version | 18 ... 30 V DC, 3 W |

Displays and controls

| | |
|-------------|---|
| Display | LCD, three digits, 9 mm (0.35 inch) high, for display of distance between sensor face and material, multi-segment graphic for operating state |
| Memory | EEPROM, non-volatile |
| Programming | 2 keys |

Electronics/enclosure

| | |
|----------------------|---|
| Connection | terminal block, max. 2.5 mm ² (14 AWG) solid/1.5 mm ² (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, CSA US/C, FM |
|--|------------------|

Level Measurement

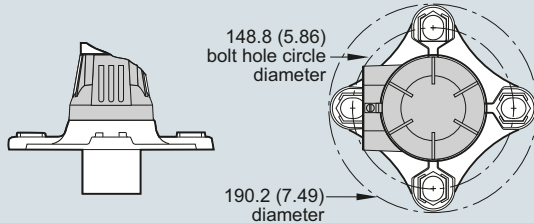
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Options

Flange adapter for mating 2" NPT or 2" BSP process connections to 3" ASME, DN 65 PN 10 and JIS 10K 3B flanges



Pointek ULS200 optional flange adapter, dimensions in mm (inch)

Selection and Ordering data

Pointek ULS200

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➤ Click on the Article No. for the online configuration in the PIA Life Cycle Portal.

Power supply

24 V DC, relay output
24 V DC, transistor output
100 ... 230 V AC, relay output

Approvals

CE, RCM, CSA Class I, II, Div. 2¹⁾
CE, RCM, CSA_{US/C}, FM

Transducer/Process connection

ETFE, 2" NPT [(Taper), ANSI/ASME B1.20.1]
ETFE, R 2" [(BSPT), EN 10226]
ETFE, G 2" [(BSPP), EN ISO 228-1]

PVDF copolymer, 2" NPT [(Taper), ANSI/ASME B1.20.1]
PVDF copolymer, R 2" [(BSPT), EN 10226]
PVDF copolymer, G [(BSPP), EN ISO 228-1]
PVDF copolymer, 4" sanitary mounting²⁾

Enclosure/cable inlet

Polycarbonate

- Cable inlet PG 13.5
- Cable inlet 1/2" NPT

¹⁾ Available with Enclosure/cable inlet option 2 only

²⁾ Available with Approvals option K only

Article No.

7ML1510-

0

1

2

3

J

K

A

B

C

E

F

G

J

1

2

Selection and Ordering data

Order code

Further designs

Please add **"-Z"** to Article No. and specify Order code(s)

Stainless steel tag [69 x 50 mm (2.71 x 1.97 inch)]:
Measuring-point number/identification
(max. 27 characters) specify in plain text

Y15

Operating Instructions

All literature is available to download for free, in a range of languages, at <http://www.siemens.com/processinstrumentation/documentation>

Accessories

Tag, stainless steel, 12 x 45 mm (0.47 x 1.77 inch), 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" BSP nylon plastic locknut

2" NPT nylon plastic locknut

4" sanitary mounting clamp

Article No.

7ML1930-1AC

7ML1830-1BK

7ML1830-1BT

7ML1830-1BU

7ML1830-1DQ

7ML1830-1DT

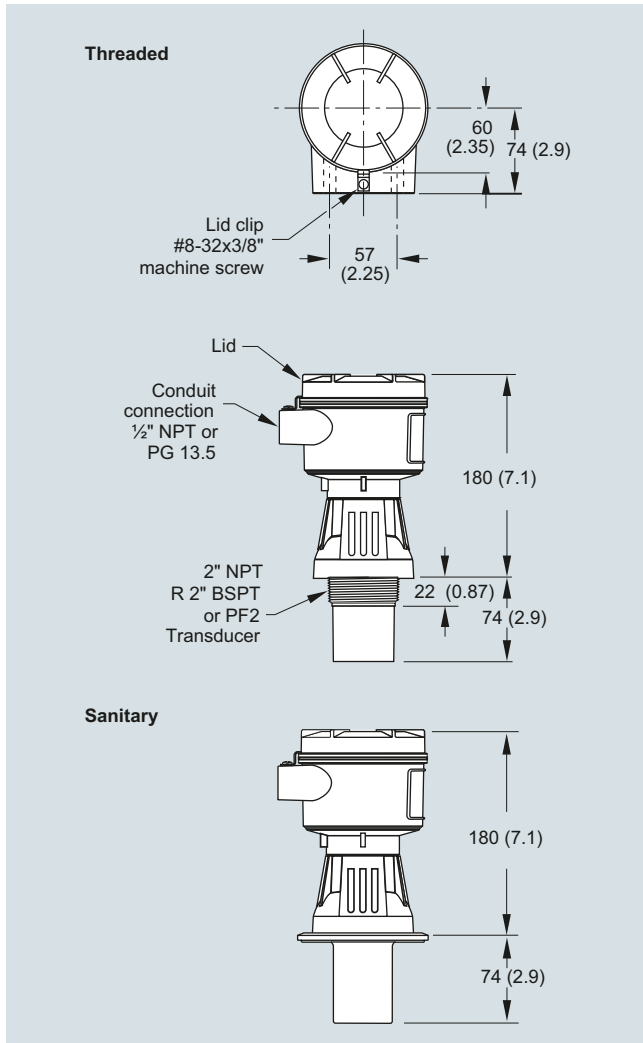
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Spare Parts

Polycarbonate Lid

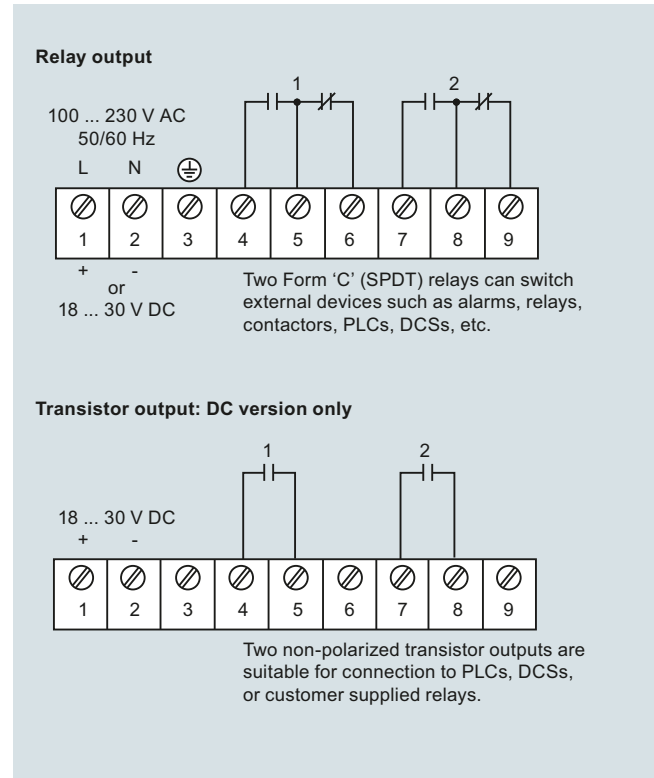
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Dimensional drawings



Pointek ULS200, dimensions in mm (inch)

Circuit diagrams



Pointek ULS200 connections