

Level instruments

Point level measurement - Rotating paddle switch

SITRANS LPS200

Overview



SITRANS LPS200 is a rotary paddle switch for point level detection in bulk solids.

Benefits

- Proven paddle switch technology for bulk solids
- High integrity mechanical seal
- Optional switch selectable power supply
- Unique friction clutch mechanism
- Rotatable enclosure
- Optional paddle for use with low density materials
- Simple installation through existing process connection
- High temperature model and optional extension kit available
- Optional fail-safe configuration

Application

The paddle switch technology detects full, empty or demand conditions on materials such as grain, feed, cement, plastic granulate and wood chips. The paddle switch can handle bulk densities as low as 15 g/l (2,19 lb/ft³) with the optional rectangular vane or 100 g/l (6.25 lb/ft³) with the standard measuring vane.

A low revolution geared motor with slip clutch drives a rotating measuring vane which senses the presence of material at the mounted level of the LPS200. As material comes into contact with the rotating paddle, rotation stops, which changes the microswitch state. When the paddle is no longer covered by material, rotation resumes and the relay reverts to its normal condition.

The LPS200 has a rugged design for use in harsh conditions in the solids industry. The sensitivity of the paddle can be adjusted for varying material properties like buildup on the vane.

The LPS200 comes in a variety of configurations including compact, extended and cable extension. It is equipped with a standard vane which is effective in most applications, but can be configured with a hinged or rectangular vane for increased sensitivity for light materials.

- Key Applications: bulk solids such as grain, feed, cement, plastic granulate, wood chips

Technical specifications

Mode of operation

Measuring principle Rotating point level switch

Input

Measured variable High and low and demand

Output

Output signal

- Alarm output Microswitch 5 A at 250 V AC, non inductive
Microswitch SPDT contact 4 A at 30 V DC, non-inductive
- Pickup delay Standard (1 rpm model): approx. 1.3 seconds
Optional process applications (5 rpm model): approx. 0.26 seconds

Sensitivity

Adjustable via reset force of spring or geometry of measuring vane

Rated operating conditions

Installation conditions

- Location Indoor/outdoor

Ambient conditions

- Ambient temperature -25 to +60 °C (-13 to +140 °F)
- Installation category III
- Pollution degree 2

Medium conditions

- Temperature
 - Standard -25 to +80 °C (-13 to +176 °F)
 - Optional -25 to +350 °C (-13 to +662 °F)
- Pressure (vessel)
 - Standard Max. 0.5 bar g (7.25 psi g)
 - Optional Max. 10 bar g (145 psi g)
- Minimum material density
 - Standard measuring vane • Can detect down to 100 g/l (6.25 lb/ft³)
 - Optional measuring vane • Can detect down to 15 g/l (2.19 lb/ft³)

Design

- Material
 - Enclosure Epoxy coated aluminum
 - Process connection, measuring shaft and vane Stainless steel or aluminum
- Process connection Thread NPT, BSP, and flange options
- Degree of protection IP65/Type 4/NEMA 4
- Conduit entry 2 x M20x1.5 or 2 x 1/2" NPT

Power supply

- Jumper selectable
 - 115 V AC, ± 15%, 50 to 60 Hz, 4 VA or 230 V AC, ± 15%, 50 Hz, 6 VA, or 48 V AC, or 24 V AC
 - or 24 V DC, ± 15%, 2.5 W

Certificates and approvals

- CSA/FM General Purpose
- CE
- CSA/FM Dust Ignition Proof
- ATEX II 1/2 D
- C-TICK

Level instruments

Point level measurement - Rotating paddle switch

SITRANS LPS200

Selection and Ordering data	Order No.
SITRANS LPS200, compact Rotary paddle switch for level detection in bulk solids Compact design for side or top mounted applications	7 ML 5 7 2 5 - - - - - - 0
Process temperature Up to +80 °C (+176 °F) Up to +150 °C (+302 °F) Up to +250 °C (+482 °F) Up to +350 °C (+662 °F) ¹⁾ Up to +80 °C (+176 °F) basic version aluminum ^{2) 3)} Up to +80 °C (+176 °F) basic version stainless steel ^{2) 4)}	1 2 3 4 5 6
Power supply 230 V AC, 1 rev/min. 230 V AC, 1 rev/min., fail-safe 230 V AC, 5 rev/min. 230 V AC, 5 rev/min., fail-safe 115 V AC, 1 rev/min. 115 V AC, 1 rev/min., fail-safe 115 V AC, 5 rev/min. 115 V AC, 5 rev/min., fail-safe 48 V AC, 1 rev/min. 24 V AC, 1 rev/min. 24 V DC, 1 rev/min. 24 V DC, 1 rev/min., fail-safe 24 V DC, 5 rev/min. 24 V DC, 5 rev/min., fail-safe Switch selectable 230 V AC/115 V AC/24 V DC multivoltage, 1 rev/min. Switch selectable 230 V AC/115 V AC/24 V DC multivoltage, 5 rev/min.	A B C D E F G H J K L M N P Q R
Process connection <u>Threaded</u> G 1¼" [(BSPP), EN ISO 228-1] G 1" [(BSPP), EN ISO 228-1] G 1½" [(BSPP), EN ISO 228-1] 1" NPT [(Taper), ANSI/ASME B1.20.1] 1¼" NPT [(Taper), ANSI/ASME B1.20.1] 1½" NPT [(Taper), ANSI/ASME B1.20.1] <u>Flanged</u> DN 32 PN 6, EN1092-1 (1.4541/321) DN 100 PN 6, EN1092-1 (1.4541/321) DN 100 PN 16, EN1092-1 (1.4541/321) 2" ASME 150 lbs B16.5 (1.4541/321) 3" ASME 150 lbs B16.5 (1.4541/321) 4" ASME 150 lbs B16.5 (1.4541/321)	A B C D E F G H J K L M
Process pressure Up to 0.5 bar (7.25 psi) Up to 5 bar (72.5 psi) Up to 10 bar (145 psi)	1 2 3
Process connection material Aluminum ⁵⁾ Stainless steel 303 (1.4305)	1 2
Extension length 100 mm (3.94") ⁶⁾ 150 mm (5.91") 200 mm (7.87") 250 mm (9.84") 300 mm (11.81")	1 2 3 4 5

Selection and Ordering data	Order No.
SITRANS LPS200, compact Rotary paddle switch for level detection in bulk solids Compact design for side or top mounted applications	7 ML 5 7 2 5 - - - - - - 0
Measuring vane Boot shaped, 35 x 106 mm (1.38 x 4.17") ⁷⁾ Hinged vane, 65 x 210 mm (2.56 x 8.27") ⁷⁾⁸⁾ Boot shaped, 28 x 98 mm (1.10 x 3.86") Rectangular 50 x 150 mm (1.97 x 5.91") ⁹⁾ Rectangular 50 x 250 mm (1.97 x 9.84") ⁹⁾ Rectangular 98 x 150 mm (3.86 x 5.91") ⁹⁾ Rectangular 98 x 250 mm (3.86 x 9.84") ⁹⁾	A B C D E F G
Approvals CSA/FM Dust Ignition Proof, C-TICK ATEX II 1/2 D, C-TICK CSA/FM General Purpose, C-TICK CE, C-TICK	A B C D
Further designs Please add "-Z" to Order No. and specify Order code(s). Heating of enclosure ^{10) 11)} Signal bulb inserted in M20 cable gland ¹⁰⁾ SITRANS LPS200 designed for food applications with shaft seal conforming to FDA standards	Order code A35 A20 K01
Additional Operating Instructions Multi-language This device is shipped with the Siemens Milltronics manual CD containing the complete ATEX Quick Start and Operating Instructions library.	Order No. 7ML1998-5FS62
Spare parts Motor gear /PLC, multi-voltage Replacement vane, boot shape, 35 x 106 mm (1.38 x 4.17") Hinged vane, 65 x 210 mm (2.56 x 8.27")	7ML1830-1KG 7ML1830-1KH 7ML1830-1KJ
Rigid extension kit (includes spring coupling, rigid tube extension and required pins) Extension: 500 mm, 400 mm, 300 mm (19.7", 15.8", 11.8") Extension: 1000 mm, 900 mm, 800 mm, 700 mm, 600 mm (39.4", 35.4", 31.5", 27.6", 23.6") Extension: 1500 mm, 1400 mm, 1300 mm, 1200 mm, 1100 mm (59.1", 55.1", 51.2", 47.2", 43.3")	7ML5711-0AA 7ML5711-1AA 7ML5711-2AA
Available ex stock SITRANS LPS200, compact for up to +80 °C (+176 °F), aluminum, with power supply A, process connection C, process pressure 1, process connection material 1, extension length 2, measuring vane A, and approval D SITRANS LPS200, compact for up to +80 °C (+176 °F), aluminum, with power supply E, process connection E, process pressure 1, process connection material 1, extension length 2, measuring vane A, and approval C	7ML5725-5AC11-2AD0 7ML5725-5EE11-2AC0

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Level instruments

Point level measurement - Rotating paddle switch

SITRANS LPS200


Selection and Ordering data

Order No.

SITRANS LPS200, compact

Rotary paddle switch for level detection in bulk solids

Compact design for side or top mounted applications

7ML5725-
 **0**

SITRANS LPS200, compact for up to +80 °C (+176 °F), stainless steel, with power supply Q, process connection C, process pressure 1, process connection material 2, extension length 2, measuring vane A, and approval B

7ML5725-6QC12-2AB0

SITRANS LPS200, compact for up to +80 °C (+176 °F), stainless steel, with power supply Q, process connection E, process pressure 1, process connection material 2, extension length 2, measuring vane A, and approval A

7ML5725-6QE12-2AA0

- 1) Available with approval option C and D only, up to max. 0.8 bar
- 2) Basic version is cost effective and offers fast delivery
- 3) Available only with power supply option A and with process connection C, and approval D, or power supply E with process connection E, and approval C, and then process pressure 1, process connection material 1, extension length 2, measuring vane A
- 4) Available only with power supply option Q, process connection C with approval B, or process connection E with approval A, and then process pressure 1, process connection material 2, extension length 2 and measuring vane A
- 5) Available with process connections A to F, process pressure option 1, and process temperature option 1 only
- 6) Available with measuring vane options A, C to G, only
- 7) Add 16 mm (0.63") to extension length
- 8) Available with extension length options 2 to 5 only
- 9) Available with process connections G, H, J to M, only
- 10) Available with approval options D only
- 11) Available with power supply options A to H, J to N, P only

► Available ex stock.

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Level instruments

Point level measurement - Rotating paddle switch

SITRANS LPS200

Selection and Ordering data	Order No.
SITRANS LPS200, Extended Rotary paddle switch for level detection in bulk solids; ideal for heavy, sticky, or high impact applications. Designed with added protection tube for enhanced shaft protection	7 M L 5 7 2 6 -
Process temperature Up to +80 °C (+176 °F) Up to +150 °C (+302 °F) Up to +250 °C (+482 °F) Up to +350 °C (+662 °F) ¹⁾ Up to +80 °C (+176 °F) basic version ²⁾	1 2 3 4 ▶ 5
Power supply 230 V AC, 1 rev/min. 230 V AC, 1 rev/min., fail-safe 230 V AC, 5 rev/min. 230 V AC, 5 rev/min., fail-safe 115 V AC, 1 rev/min. 115 V AC, 1 rev/min., fail-safe 115 V AC, 5 rev/min. 115 V AC, 5 rev/min., fail-safe 48 V AC, 1 rev/min. 24 V AC, 1 rev/min. 24 V DC, 1 rev/min. 24 V DC, 1 rev/min., fail-safe 24 V DC, 5 rev/min. 24 V DC, 5 rev/min., fail-safe Switch selectable 230 V AC/115 V AC/24 V DC multivoltage, 1 rev/min. Switch selectable 230 V AC/115 V AC/24 V DC multivoltage, 5 rev/min.	A B C D E F G H J K L M N P ▶ Q R
Process connection Threaded G 1¼" [(BSPP), EN ISO 228-1] G 1½" [(BSPP), EN ISO 228-1] 1¼" NPT [(Taper), ANSI/ASME B1.20.1] 1½" NPT [(Taper), ANSI/ASME B1.20.1] Flanged DN 32 PN 6, EN1092-1 (1.4541/321) DN 100 PN 6, EN1092-1 (1.4541/321) DN 100 PN 16, EN1092-1 (1.4541/321) 2" ASME 150 lbs B16.5 (1.4541/321) 3" ASME 150 lbs B16.5 (1.4541/321) 4" ASME 150 lbs B16.5 (1.4541/321)	A B C D E F G H J K
Process pressure Up to 0.5 bar (7.25 psi) Up to 5 bar (72.5 psi) Up to 10 bar (145 psi)	1 2 3
Process connection material Aluminum ^{3) 4)} Stainless steel 303 (1.4305)	1 ▶ 2
Extension length 150 mm (5.91") ⁵⁾ 200 mm (7.87") 250 mm (9.84") 300 mm (11.81")	1 ▶ 2 3 4
Extension material (protection tube) Aluminum ³⁾ Stainless steel 303 (1.4305)	A ▶ B

Selection and Ordering data	Order No.
SITRANS LPS200, Extended Rotary paddle switch for level detection in bulk solids; ideal for heavy, sticky, or high impact applications. Designed with added protection tube for enhanced shaft protection	7 M L 5 7 2 6 -
Measuring vane Boot shaped 35 x 106 mm (1.38 x 4.17") ⁶⁾ Hinged vane 65 x 210 mm (2.56 x 8.27") ⁶⁾ Rectangular 50 x 150 mm (1.97 x 5.91") ⁷⁾ Rectangular 50 x 250 mm (1.97 x 9.84") ⁷⁾ Rectangular 98 x 150 mm (3.86 x 5.91") ⁷⁾ Rectangular 98 x 250 mm (3.86 x 9.84") ⁷⁾	▶ A ▶ B D E F G
Approvals CSA/FM Dust Ignition Proof, C-TICK ATEX II 1/2 D, C-TICK CSA/FM General Purpose, C-TICK CE, C-TICK	▶ 1 ▶ 2 3 4
Further designs Please add "-Z" to Order No. and specify Order code(s). Heating of enclosure ^{8) 9)} Signal bulb inserted in M20 cable gland ⁸⁾ SITRANS LPS200 designed for food applications with shaft seal conforming to FDA standards	Order code A35 A20 K01
Additional Operating Instructions Multi-language This device is shipped with the Siemens Milltronics manual CD containing the complete ATEX Quick Start and Operating Instructions library.	Order No. 7ML1998-5FS62
Spare parts Motor gear /PLC, multi-voltage Replacement vane, boot shape, 35 x 106 mm (1.38 x 4.17") Hinged vane, 65 x 210 mm (2.56 x 8.27")	7ML1830-1KG 7ML1830-1KH 7ML1830-1KJ
Available ex stock SITRANS LPS200, extended for up to +80 °C (+176 °F), power supply Q, process connection B, process pressure 1, process connection material 2, extension length 2, extension material B, measuring vane A, and approval 2 SITRANS LPS200, extended for up to +80 °C (+176 °F), power supply Q, process connection C, process pressure 1, process connection material 2, extension length 2, extension material B, measuring vane A, and approval 1	7ML5726-5QB12-2BA2 7ML5726-5QC12-2BA1

- 1) Available with approval option 3 and 4 only, up to max. 0.8 bar
 - 2) Available with power supply option Q (process connection B with approval 2 or process connection C with approval 1), process pressure 1, process connection material 2, extension length 2, protection tube B and measuring vane A only
 - 3) Available with process connections A to D, and process temperature option 1 only
 - 4) Available with process pressure option 1 only
 - 5) Not available with measuring vane option B
 - 6) Add 16 mm (0.63") to extension length
 - 7) Available with process connections E to H, J, K, only
 - 8) Available with approval options 4 only
 - 9) Available with power supply options A to H, J to N, P only
- ▶ Available ex stock.

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Level instruments

Point level measurement - Rotating paddle switch

SITRANS LPS200

Selection and Ordering data

SITRANS LPS200, cable extension

Rotary paddle switch for level detection in bulk solids
Cable extension for increased length in top-mounted applications

Process temperature

Up to +80 °C (+176 °F)
Up to +150 °C (+302 °F)
Up to +250 °C (+482 °F)
Up to +350 °C (+662 °F)¹⁾
Up to +80 °C (+176 °F) basic version^{2) 5)}

Power supply

230 V AC, 1 rev/min.
230 V AC, 1 rev/min., fail-safe
230 V AC, 5 rev/min.
230 V AC, 5 rev/min., fail-safe
115 V AC, 1 rev/min.
115 V AC, 1 rev/min., fail-safe
115 V AC, 5 rev/min.
115 V AC, 5 rev/min., fail-safe
48 V AC, 1 rev/min.
24 V AC, 1 rev/min.
24 V DC, 1 rev/min.
24 V DC, 1 rev/min., fail-safe
24 V DC, 5 rev/min.
24 V DC, 5 rev/min., fail-safe
Switch selectable 230 V AC/115 V AC/24 V DC multivoltage, 1 rev/min.
Switch selectable 230 V AC/115 V AC/24 V DC multivoltage, 5 rev/min.

Process connection

Threaded

G 1¼" [(BSPP), EN ISO 228-1]
G 1½" [(BSPP), EN ISO 228-1]
1¼" NPT [(Taper), ANSI/ASME B1.20.1]
1½" NPT [(Taper), ANSI/ASME B1.20.1]

Flanged

DN 32 PN 6, EN1092-1 (1.4541/321)
DN 100 PN 6, EN1092-1 (1.4541/321)
DN 100 PN 16, EN1092-1 (1.4541/321)
2" ASME 150 lbs B16.5 (1.4541/321)
3" ASME 150 lbs B16.5 (1.4541/321)
4" ASME 150 lbs B16.5 (1.4541/321)

Process pressure

Up to 0.5 bar (7.25 psi)
Up to 5 bar (72.5 psi)
Up to 10 bar (145 psi)

Process connection material

Aluminum³⁾
Stainless steel 303 (1.4305)

Cable extension length

Standard cable length, 2000 mm (78.74")

Add order code Y01 and plain text: "Insertion length ... mm"

500 to 1000 mm (19.69 to 39.37")
Cable length 1001 to 2000 mm (39.41 to 78.74")
Cable length 2001 to 3000 mm (78.78 to 118.11")
Cable length 3001 to 4000 mm (118.15 to 157.48")
Cable length 4001 to 5000 mm (157.52 to 196.85")
Cable length 5001 to 6000 mm (196.89 to 236.22")
Cable length 6001 to 7000 mm (236.26 to 275.59")
Cable length 7001 to 10000 mm (275.63 to 393.70")

Order No.

7 ML 5 7 2 7 -

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Selection and Ordering data

SITRANS LPS200, cable extension

Rotary paddle switch for level detection in bulk solids
Cable extension for increased length in top-mounted applications

Measuring vane

Boot shaped, 35 x 106 mm (1.38 x 4.17")⁴⁾
Hinged vane, 65 x 210 mm (2.56 x 8.27")⁴⁾
Boot shaped, 28 x 98 mm (1.10 x 3.86")
Rectangular 50 x 150 mm (1.97 x 5.91")⁵⁾
Rectangular 50 x 250 mm (1.97 x 9.84")⁵⁾
Rectangular 98 x 150 mm (3.86 x 5.91")⁵⁾

Approvals

CSA/FM Dust Ignition Proof, C-TICK
ATEX II 1/2 D, C-TICK
CSA/FM General Purpose, C-TICK
CE, C-TICK

Further designs

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

Total insertion length:
Enter the total insertion length in plain text description, max. 10000 mm (393.70")

Reinforced cable (max. 28 kN pulling force)
Heating of enclosure^{6) 7)}

Signal bulb inserted in M20 cable gland⁶⁾

Additional Operating Instructions

Multi-language

This device is shipped with the Siemens Milltronics manual CD containing the complete ATEX Quick Start and Operating Instructions library.

Spare parts

Motor gear /PLC, multi-voltage
Replacement vane, boot shape, 35 x 106 mm (1.38 x 4.17")
Hinged vane, 65 x 210 mm (2.56 x 8.27")
Rope extension kit, 2 m (6.56 ft)

Available ex stock

SITRANS LPS200, cable extension for up to +80 °C (+176 °F), power supply Q, process connection B, process pressure 1, process connection material 2, extension length 0, measuring vane A, and approval B

SITRANS LPS200, cable extension for up to +80 °C (+176 °F), power supply Q, process connection C, process pressure 1, process connection material 2, extension length 0, measuring vane A, and approval A

- 1) Available with approval option C and D only, up to max. 0.8 bar
- 2) Available only with Power supply Q, (Process connection B with Approvals B or Process connection C with Approvals A), Process pressure 1, Process connection material 2, Cable Extension length 0 and Measuring Vane A
- 3) Available with process connections A to D, process pressure option 1, and process temperature option 1 only
- 4) Add 16 mm (0.63") to extension length
- 5) Available with process connections E to H, J, K, only
- 6) Available with approval options D only
- 7) Available with power supply options A to H, J to N, and P, only

Order No.

7 ML 5 7 2 7 -

0

A
B
C
D
E
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A
B
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Order code

Y01

P01
A35

A20

Order No.

7ML1998-5FS62

7ML1830-1KG
7ML1830-1KH
7ML1830-1KJ
7ML1830-1KK

7ML5727-
5QB12-0AB0

7ML5727-
5QC12-0AA0

Level instruments

Point level measurement - Rotating paddle switch

SITRANS LPS200

Selection and Ordering data	Order No.
SITRANS LPS200, angled extension Rotary paddle switch with robust design for level detection in bulk solids; ideal for heavy or sticky applications. Angled extension designed to avoid falling material in side mount applications	7ML5728- ■■■■■-■■■0
Process temperature Up to +80 °C (+176 °F) Up to +150 °C (+302 °F) Up to +250 °C (+482 °F)	1 2 3
Power supply 230 V AC, 1 rev/min. 230 V AC, 1 rev/min., fail-safe 230 V AC, 5 rev/min. 230 V AC, 5 rev/min., fail-safe 115 V AC, 1 rev/min. 115 V AC, 1 rev/min., fail-safe 115 V AC, 5 rev/min. 115 V AC, 5 rev/min., fail-safe 48 V AC, 1 rev/min. 24 V AC, 1 rev/min. 24 V DC, 1 rev/min. 24 V DC, 1 rev/min., fail-safe 24 V DC, 5 rev/min. 24 V DC, 5 rev/min., fail-safe Switch selectable 230 V AC/115 V AC/24 V DC multivoltage, 1 rev/min. Switch selectable 230 V AC/115 V AC/24 V DC multivoltage, 5 rev/min.	A B C D E F G H J K L M N P Q R
Process connection <u>Elonged</u> DN 100 PN 6, EN1092-1 (1.4541/321) DN 100 PN 16, EN1092-1 (1.4541/321) 4" ASME 150 lbs B16.5 (1.4541/321)	A B C
Process pressure Up to 0.5 bar (7.25 psi) Up to 5 bar (72.5 psi) Up to 10 bar (145 psi)	1 2 3
Process connection material Stainless steel 303 (1.4305)	1
Extension length 125 mm (4.92") 150 mm (5.91") 200 mm (7.87") 250 mm (9.84") 300 mm (11.81")	1 2 3 4 5
Measuring vane Rectangular vane, 50 x 98 mm (1.97 x 3.86") Rectangular vane, 50 x 150 mm (1.97 x 5.91") Rectangular vane, 50 x 250 mm (1.97 x 9.84") Rectangular vane 98 x 150 mm (3.86 x 5.91") Rectangular vane 98 x 250 mm (3.86 x 9.84") Hinged vane, 65 x 210 mm (2.56 x 8.27")	A B C D E F
Approvals CSA/FM Dust Ignition Proof, C-TICK ATEX II 1/2 D, C-TICK CSA/FM General Purpose, C-TICK CE, C-TICK	A B C D

Selection and Ordering data	Order No.
SITRANS LPS200, angled extension Rotary paddle switch with robust design for level detection in bulk solids; ideal for heavy or sticky applications. Angled extension designed to avoid falling material in side mount applications	7ML5728- ■■■■■-■■■0
Further designs Please add "Z" to Order No. and specify Order code(s). Heating of enclosure ^{1) 2)} Signal bulb inserted in M20 cable gland ¹⁾	Order code A35 A20
Additional Operating Instructions Multi-language This device is shipped with the Siemens Milltronics manual CD containing the complete ATEX Quick Start and Operating Instructions library.	Order No. 7ML1998-5FS62
Spare parts Motor gear /PLC, multi-voltage Replacement vane, boot shape, 35 x 106 mm (1.38 x 4.17") Hinged vane, 65 x 210 mm (2.56 x 8.27")	7ML1830-1KG 7ML1830-1KH 7ML1830-1KJ

¹⁾ Available with approval options D only

²⁾ Available with power supply options A to H, J to N, P only

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Level instruments

Point level measurement - Rotating paddle switch

SITRANS LPS200

Selection and Ordering data

SITRANS LPS200, rigid extension

Rotary paddle switch for top mount point level detection in bulk solids

Process temperature

Up to +80 °C (+176 °F)

Up to +150 °C (+302 °F)

Up to +250 °C (+482 °F)

Up to +350 °C (+662 °F)¹⁾

Power supply

230 V AC, 1 rev/min.

230 V AC, 1 rev/min., fail-safe

230 V AC, 5 rev/min.

230 V AC, 5 rev/min., fail-safe

115 V AC, 1 rev/min.

115 V AC, 1 rev/min., fail-safe

115 V AC, 5 rev/min.

115 V AC, 5 rev/min., fail-safe

48 V AC, 1 rev/min.

24 V AC, 1 rev/min.

24 V DC, 1 rev/min.

24 V DC, 1 rev/min., fail-safe

24 V DC, 5 rev/min.

24 V DC, 5 rev/min., fail-safe

Switch selectable 230 V AC/115 V AC/24 V DC multivoltage, 1 rev/min.

Switch selectable 230 V AC/115 V AC/24 V DC multivoltage, 5 rev/min.

Process connection

Threaded

G 1¼" [(BSPP), EN ISO 228-1]

G 1½" [(BSPP), EN ISO 228-1]

1¼" NPT [(Taper), ANSI/ASME B1.20.1]

1½" NPT [(Taper), ANSI/ASME B1.20.1]

Flanged

DN 32 PN 6, EN1092-1 (1.4541/321)

DN 100 PN 6, EN1092-1 (1.4541/321)

DN 100 PN 16, EN1092-1 (1.4541/321)

2" ASME 150 lbs B16.5 (1.4541/321)

3" ASME 150 lbs B16.5 (1.4541/321)

4" ASME 150 lbs B16.5 (1.4541/321)

Process pressure

Up to 0.5 bar (7.25 psi)

Up to 5 bar (72.5 psi)

Up to 10 bar (145 psi)

Process connection material

Aluminum^{2) 3) 4)}

Stainless steel 303 (1.4305)⁵⁾

Extension material (protection tube)

Aluminum^{2) 4) 6) 7)}

Stainless steel 303 (1.4305)⁵⁾

Extension length

Aluminum

250 to 500 mm (9.84 to 19.69")

501 to 750 mm (19.72 to 29.53")

751 to 1000 mm (29.57 to 39.37")

1001 to 1250 mm (39.41 to 42.21")

1251 to 1500 mm (49.25 to 59.06")

1501 to 1750 mm (59.09 to 68.90")

1751 to 2000 mm (68.94 to 78.74")

2001 to 2250 mm (78.78 to 88.58")

2251 to 2500 mm (88.62 to 98.43")

2501 to 2750 mm (98.46 to 108.27")

2751 to 3000 mm (108.31 to 118.11")

3001 to 3250 mm (118.15 to 127.95")

3251 to 3500 mm (127.99 to 137.80")

3501 to 3750 mm (137.83 to 147.64")

3751 to 4000 mm (147.67 to 157.48")

Order No.

7ML5730-

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Selection and Ordering data

SITRANS LPS200, rigid extension

Rotary paddle switch for top mount point level detection in bulk solids

Stainless steel 303 (1.4305)

250 to 500 mm (9.84 to 19.69")

501 to 750 mm (19.72 to 29.53")

751 to 1000 mm (29.57 to 39.37")

1001 to 1500 mm (39.41 to 59.05")

1501 to 2000 mm (59.09 to 78.74")

2001 to 2500 mm (78.78 to 98.42")

2501 to 3000 mm (98.46 to 118.11")

3001 to 4000 mm (118.14.78 to 157.48")

Measuring vane

Boot shaped, 35 x 106 mm (1.34 x 4.17")⁸⁾

Hinged vane, 60 x 200 mm (2.36 x 7.87")

Rectangular 50 x 150 mm (1.97 x 5.91")⁹⁾

Rectangular 50 x 250 mm (1.97 x 9.84")⁹⁾

Rectangular 98 x 150 mm (3.86 x 5.91")⁹⁾

Rectangular 98 x 250 mm (3.86 x 9.84")⁹⁾

Approvals

CSA/FM Dust Ignition Proof, C-TICK

ATEX II 1/2 D, C-TICK

CSA/FM General Purpose, C-TICK

CE, C-TICK

Further designs

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

Total insertion length: Enter the total insertion length in plain text description, max. 4000 mm (157.48")

Heating of enclosure^{10) 11)}

Signal bulb inserted in M20 cable gland¹⁰⁾

SITRANS LPS200 designed for food applications with shaft seal conforming to FDA standards¹²⁾

Seal at tube end for ingress protection and shaft stability

- Max. temperature +80 °C (+176 °F)

- Max. temperature +150 °C (+302 °F)

- Max. temperature +250 °C (+482 °F)

- Max. temperature +350 °C (+662 °F)

Sliding sleeve (standard, max. pressure 0.8 bar)

Sliding sleeve (pressure tight, for over-pressure application starting from 1 bar max., dependent on pressure option ordered)

Additional Operating Instructions

Multi-language

This device is shipped with the Siemens Milltronics manual CD containing the complete ATEX Quick Start and Operating Instructions library.

Spare parts

Motor gear /PLC, multi-voltage

Replacement vane, boot shape,

35 x 106 mm (1.38 x 4.17")

Hinged vane, 65 x 210 mm (2.56 x 8.27")

¹⁾ Available with approval option 3 and 4 only, up to max. 0.8 bar

²⁾ Available with process connections A to D only

³⁾ Available with process pressure option 1 only

⁴⁾ Available with extension length options A to Q only

⁵⁾ Available with extension length options R to Y only

⁶⁾ Available with process connection material option 1 only

⁷⁾ Available with process temperature option 1 only

⁸⁾ Add 16 mm (0.63") to extension length

⁹⁾ Available with process connections E to H, J, K, only

¹⁰⁾ Available with approval options 4 only

¹¹⁾ Available with power supply options A to H, J to N, P, only

¹²⁾ Available when ordered with ingress protection seal P06 to P09 only

Order No.

7ML5730-

■ ■ ■ ■ ■ - ■ ■ ■ ■ ■

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Order code

Y01

A35

A20

K01

P06

P07

P08

P09

P12

P13

Order No.

7ML1998-5FS62

7ML1830-1KG

7ML1830-1KH

7ML1830-1KJ

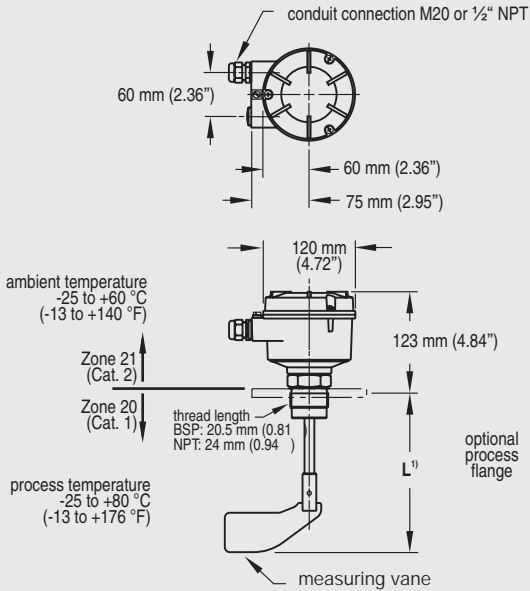
Level instruments

Point level measurement - Rotating paddle switch

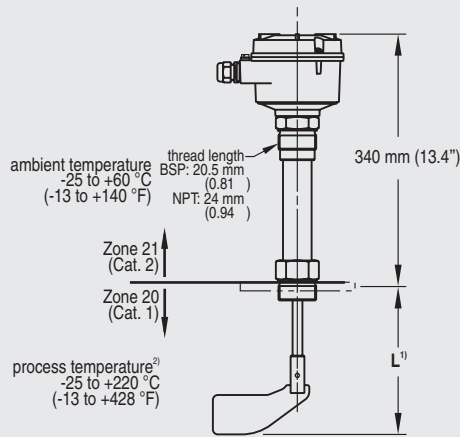
SITRANS LPS200

Dimensional drawings

Standard model: compact version

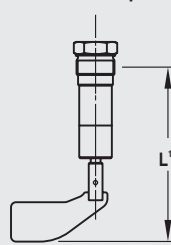


High Temperature Model: compact version

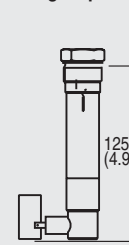


L = Length	
100 mm	3.94"
150 mm	5.91"
200 mm	7.87"
250 mm	9.84"
300 mm	11.81"

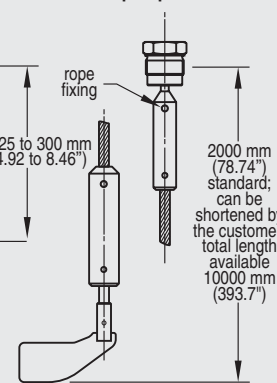
extended option



angle option

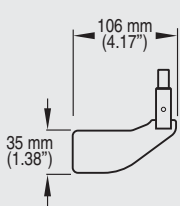


rope option

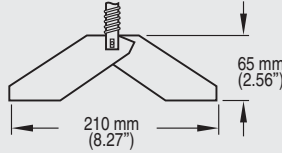
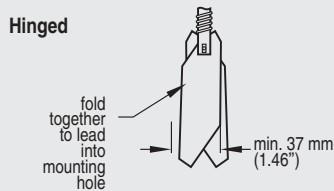


Measuring Vanes

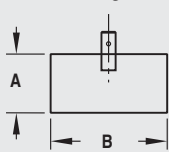
Standard



Hinged



Rectangular



Rectangular vane options

	A	B
50 mm (1.97")	98 mm (3.86")	
50 mm (1.97")	150 mm (5.90")	
50 mm (1.97")	250 mm (9.84")	
98 mm (3.86")	150 mm (5.90")	
98 mm (3.86")	250 mm (9.84")	

Vane	completely covered with material		covered up to 10 cm (3.93") with material	
	spring adjustment		spring adjustment	
	light	central (factory setting)	light	central (factory setting)
boot shaped 35 x 106 mm	200 g/l (12.5 lb/ft ³)	300 g/l (18.7 lb/ft ³)	100 g/l (6.2 lb/ft ³)	150 g/l (9.4 lb/ft ³)
boot shaped 28 x 98 mm	300 g/l (18.7 lb/ft ³)	500 g/l (31.2 lb/ft ³)	150 g/l (9.4 lb/ft ³)	150 g/l (9.4 lb/ft ³)
rectangular 50 x 98 mm	300 g/l (18.7 lb/ft ³)	500 g/l (31.2 lb/ft ³)	150 g/l (9.4 lb/ft ³)	250 g/l (15.6 lb/ft ³)
rectangular 50 x 150 mm	80 g/l (5.0 lb/ft ³)	120 g/l (7.5 lb/ft ³)	40 g/l (2.5 lb/ft ³)	60 g/l (3.7 lb/ft ³)
rectangular 50 x 250 mm	30 g/l (1.9 lb/ft ³)	50 g/l (3.1 lb/ft ³)	15 g/l (0.9 lb/ft ³)	25 g/l (1.6 lb/ft ³)
rectangular 98 x 150 mm	30 g/l (1.9 lb/ft ³)	50 g/l (3.1 lb/ft ³)	15 g/l (0.9 lb/ft ³)	25 g/l (1.6 lb/ft ³)
rectangular 98 x 250 mm	20 g/l (1.2 lb/ft ³)	30 g/l (1.9 lb/ft ³)	15 g/l (0.9 lb/ft ³)	15 g/l (0.9 lb/ft ³)
hinged 65 x 210 mm	70 g/l (4.4 lb/ft ³)	100 g/l (6.2 lb/ft ³)	35 g/l (2.2 lb/ft ³)	50 g/l (3.1 lb/ft ³)
hinged 60 x 200 mm	70 g/l (4.4 lb/ft ³)	100 g/l (6.2 lb/ft ³)	35 g/l (2.2 lb/ft ³)	50 g/l (3.1 lb/ft ³)

- For 35 X 106 mm boot shaped and 65 X 210 mm hinged measuring vanes, add 16 mm to extension length.
- For use with all approval options except CSA Class II. See manual for more details.

Notes

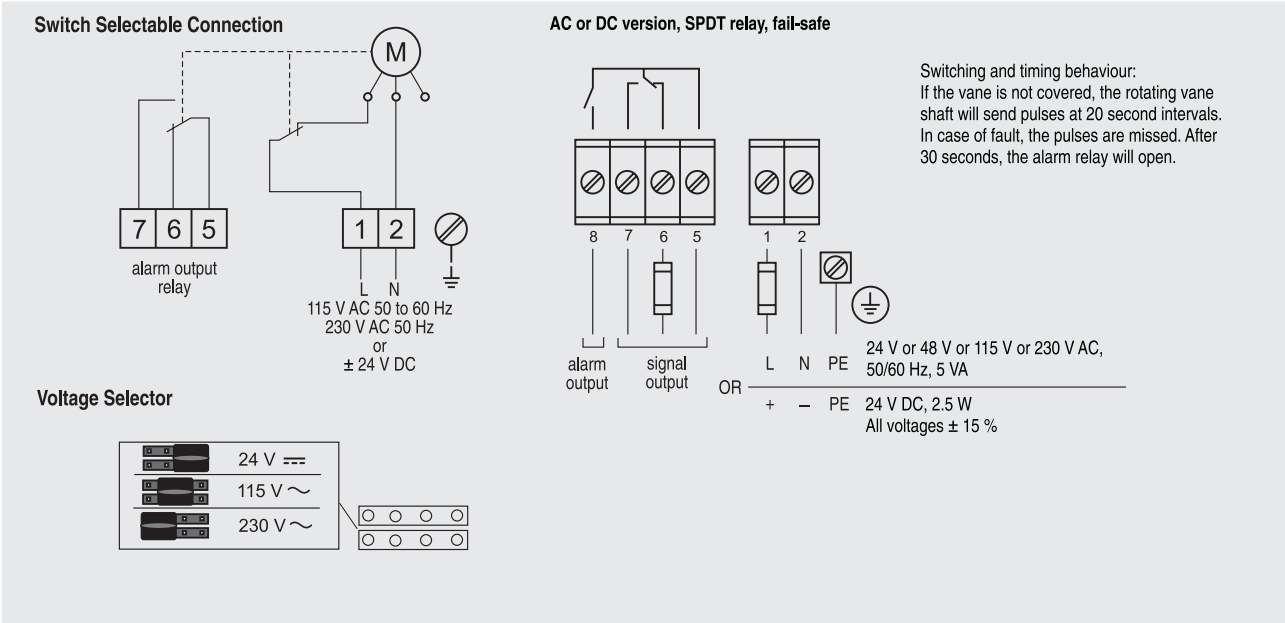
For heavy material, only top mounting of paddle switch is recommended.
Compact LPS200 is recommended for side mounting on bins for low or intermediate material levels.

Level instruments

Point level measurement - Rotating paddle switch

SITRANS LPS200

Schematics



SITRANS LPS200 connections