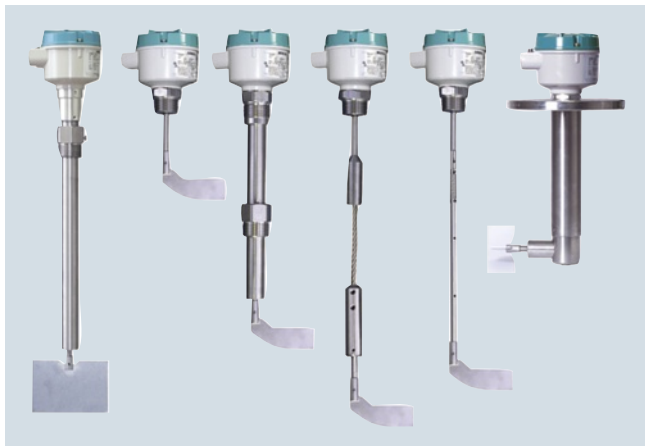


Level Measurement

Point level measurement – Rotation paddle switches

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 prevents damage from falling material
- Rotatable enclosure for convenient wiring
- Optional paddles for use with low density materials
- Small paddle makes for simple installation through existing process connection
- High temperature model and optional extension kit available
- Optional fail-safe configuration detects loss of rotation

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	Microswitch 5 A at 250 V AC, non inductive Microswitch SPDT contact 4 A at 30 V DC, non-inductive
• Alarm output	
• 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	Indoor/outdoor
• Location	
Ambient conditions	-25 ... +60 °C (-13 ... +140 °F) III
• Ambient temperature	
• Installation category	2
• Pollution degree	
Medium conditions	Bulk solids
• Temperature	-25 ... +80 °C (-13 ... +176 °F) -25 ... +600 °C (-13 ... +1112 °F)
- Standard	
- Optional	Max. 0.5 bar g (7.25 psi g) Max. 10 bar g (145 psi g)
• Pressure (vessel)	
- Standard	• Can detect down to 100 g/l (6.25 lb/ft ³) • Can detect down to 15 g/l (2.19 lb/ft ³)
- Optional	
• Minimum material density	• Can detect down to 100 g/l (6.25 lb/ft ³) • Can detect down to 15 g/l (2.19 lb/ft ³)
- Standard measuring vane	
- Optional measuring vane	
Design	
Material	Epoxy coated aluminum Stainless steel or aluminum
• Enclosure	
• Process connection, measuring shaft and vane	Thread NPT, BSP, and flange options
Process connection	
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 ... 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 • IECEx	

Level Measurement

Point level measurement – Rotation paddle switches

SITRANS LPS200

Selection and Ordering data	Article No.	Selection and Ordering data	Article 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 Rotary paddle switch for level detection in bulk solids. Compact design for side or top mounted applications.	7ML5725- - - - - - 0
Process temperature Up to 80 °C (176 °F) ◆ 1 Up to 150 °C (302 °F) ◆ 2 Up to 250 °C (482 °F) ◆ 3 Up to 600 °C (1 112 °F) ^{1) 2)} ◆ 4 Up to 80 °C (176 °F) basic version aluminum ³⁾ ▶◆ 5 Up to 80 °C (176 °F) basic version stainless steel ⁴⁾ ▶◆ 6		Measuring vane Boot shaped, 35 x 106 mm (1.38 x 4.17 inch) ¹⁰⁾ ▶◆ A Hinged vane, 65 x 200 mm (2.56 x 7.87 inch) ^{10) 11)} ◆ B Boot shaped, 28 x 98 mm (1.10 x 3.86 inch) ◆ C Rectangular 50 x 150 mm (1.97 x 5.91 inch) ¹²⁾ ◆ D Rectangular 50 x 250 mm (1.97 x 9.84 inch) ¹²⁾ ◆ E Rectangular 98 x 150 mm (3.86 x 5.91 inch) ^{12) 11)} ◆ F Rectangular 98 x 250 mm (3.86 x 9.84 inch) ^{12) 11)} ◆ G Rectangular 50 x 98 mm (1.97 x 3.86 inch) ¹²⁾ ◆ H	
Power supply 230 V AC, 1 rev/min. ▶◆ A 230 V AC, 1 rev/min., fail-safe ◆ B 230 V AC, 5 rev/min. ◆ C 230 V AC, 5 rev/min., fail-safe ▶◆ D 115 V AC, 1 rev/min. ▶◆ E 115 V AC, 1 rev/min., fail-safe ◆ F 115 V AC, 5 rev/min. ◆ G 115 V AC, 5 rev/min., fail-safe ◆ H 48 V AC, 1 rev/min. ◆ J 24 V AC, 1 rev/min. ◆ K 24 V DC, 1 rev/min. ◆ L 24 V DC, 1 rev/min., fail-safe ◆ M 24 V DC, 5 rev/min. ◆ N 24 V DC, 5 rev/min., fail-safe ◆ P Switch selectable 230 V AC/115 V AC/24 V DC multivoltage, 1 rev/min. ▶◆ Q Switch selectable 230 V AC/115 V AC/24 V DC multivoltage, 5 rev/min. ◆ R		Approvals CSA/FM Dust Ignition Proof, C-TICK ▶◆ A ATEX II 1/2 D, C-TICK ▶◆ B CSA/FM General Purpose, C-TICK ▶◆ C CE, C-TICK ▶◆ D IEC Ex ta/tb IIIC ◆ E	
Process connection <u>Threaded</u> G 1/4" [(BSPP), EN ISO 228-1] ◆ A G 1" [(BSPP), EN ISO 228-1] ◆ B G 1 1/2" [(BSPP), EN ISO 228-1] ▶◆ C 1" NPT [(Taper), ANSI/ASME B1.20.1] ◆ D 1 1/4" NPT [(Taper), ANSI/ASME B1.20.1] ▶◆ E 1 1/2" NPT [(Taper), ANSI/ASME B1.20.1] ◆ F <u>Flanged</u> DN 32 PN 6, EN 1092-1 ⁵⁾ ◆ G DN 100 PN 6, EN 1092-1 ⁵⁾ ◆ H DN 100 PN 16, EN 1092-1 ◆ J 2" ASME 150 lb B16.5 ◆ K 3" ASME 150 lb B16.5 ◆ L 4" ASME 150 lb B16.5 ◆ M 2" Tri-clamp (DN 50) ISO2852 ⁶⁾ ◆ N		1) Available with approval option C and D only, up to max. 0.5 bar 2) Not available with process connections A, B, D, E, G 3) Available with configurations 7ML5725-5AC11-2AD0 or 7ML5725-5EE11-2AC0 only 4) Available with configurations 7ML5725-6QC12-2AB0 or 7ML5725e6QE12-2AA0 only 5) Available with process pressure 1 and 2 only 6) Available with process temperature 1 only 7) Available with process connections A ... G, process pressure 1, and process temperature 1 and 5 only 8) Extension and Vane will also change to 316L, only for process connection C, F, H ... N and vane A 9) Available with measuring vane options A, C, D, E, H only 10) Add 16 mm (0.63 inch) to extension length 11) Available with extension length options 2 ... 5 only 12) Available with process connections H ... M only ◆ We can offer shorter delivery times for configurations designated with the Quick Ship Symbol ◆. For details see page 9/5 in the appendix. ▶ Available ex stock.	
Process pressure Up to 0.5 bar (7.25 psi) ▶◆ 1 Up to 5 bar (72.5 psi) ◆ 2 Up to 10 bar (145 psi) ◆ 3			
Process connection material Aluminum ⁷⁾ ▶◆ 1 Stainless steel, threads 303 (1.4305), flanges 321 (1.4541), Tri-clamp 304 (1.4301) ▶◆ 2 Stainless steel 316L (1.4404) ⁸⁾ ◆ 3			
Extension length 100 mm (3.94 inch) ⁹⁾ ◆ 1 150 mm (5.91 inch) ▶◆ 2 200 mm (7.87 inch) ◆ 3 250 mm (9.84 inch) ◆ 4 300 mm (11.81 inch) ◆ 5			

Level Measurement

Point level measurement – Rotation paddle switches

SITRANS LPS200

Selection and Ordering data

Order code

Further Designs

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

Heating of enclosure¹⁾²⁾

A35

Signal bulb inserted in M20 cable gland¹⁾

A20

Food grade materials (in contact with process), according to 1935/2004/EC, with FDA conform shaft sealing³⁾

K01

Stainless steel tag [100 x 45 mm (3.94 x 1.77 inch)]: Measuring-point number/identification (max. 27 characters); specify in plain text

Y14

Additional Operating Instructions

Article No.

Multi-language

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

7ML1998-5FS62

Spare Parts

Motor gear /PLC, multi-voltage

7ML1830-1KG

Replacement vane, boot shape, 35 x 106 mm (1.38 x 4.17 inch)

7ML1830-1KH

Hinged vane, 65 x 200 mm (2.56 x 7.87 inch)

7ML1830-1KJ

Rigid extension kit

(includes spring coupling, rigid tube extension and required pins)

Extension: 500, 400, 300 mm (19.7, 15.8, 11.8 inch)

7ML5711-0AA

Extension: 1 000, 900, 800, 700, 600 (39.4, 35.4, 31.5, 27.6, 23.6 inch)

7ML5711-1AA

Extension: 1 500, 1 400, 1 300, 1 200, 1 100 mm (59.1, 55.1, 51.2, 47.2, 43.3 inch)

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

7ML1830-1KG

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

7ML5725-5EE11-2AC0

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 D only

²⁾ Available with power supply options A, C, E, G, J, K, L, N only

³⁾ Available up to 250 °C (482 °F). This option does not automatically implement a food conform design.

Selection and Ordering data

Article No.

SITRANS LPS200, shaft protected

7ML5726-

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

Process temperature

Up to 80 °C (176 °F)

Up to 150 °C (302 °F)

Up to 250 °C (482 °F)

Up to 600 °C (1 112 °F)^{1) 2)}

Up to 80 °C (176 °F) basic version³⁾

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 1/4" [(BSPP), EN ISO 228-1]

G 1/2" [(BSPP), EN ISO 228-1]

1/4" NPT [(Taper), ANSI/ASME B1.20.1]

1/2" NPT [(Taper), ANSI/ASME B1.20.1]

Flanged

DN 32 PN 6, EN 1092-1⁴⁾

DN 100 PN 6, EN 1092-1⁴⁾

DN 100 PN 16, EN 1092-1

2" ASME 150 lb B16.5

3" ASME 150 lb B16.5

4" ASME 150 lb B16.5

2" Tri-clamp (DN 50) ISO2852⁵⁾

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

Aluminum⁶⁾

Stainless steel, threads 303 (1.4305), flanges 321 (1.4541), Tri-clamp 304 (1.4301)

Stainless steel 316L (1.4404)⁷⁾

Extension length

150 mm (5.91 inch)⁸⁾

200 mm (7.87 inch)

250 mm (9.84 inch)

300 mm (11.81 inch)

Extension material (protection tube)

Aluminum⁹⁾

Stainless steel 303 (1.4305)


Stainless steel 316L (1.4404)¹⁰⁾

Article No.	Order code	Process temperature	Power supply	Process connection	Process pressure	Process connection material	Extension length	Extension material (protection tube)
7ML5726-								
		1	A	A	1	1	1	A
		2	B	B	2	2	2	B
		3	C	C	3	3	3	C
		4	D	D			4	
		5	E	E				
			F	F				
			G	G				
			H	H				
			J	J				
			K	K				
			L	L				
			M					
			N					
			P					
			Q					
			R					

Level Measurement

Point level measurement – Rotation paddle switches

SITRANS LPS200

Selection and Ordering data	Article No.	Selection and Ordering data	Order code
SITRANS LPS200, shaft protected 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	7ML5726- 	Further Designs Please add "-Z" to Article No. and specify Order code(s).	
Measuring vane Boot shaped 35 x 106 mm (1.38 x 4.17 inch) ¹¹⁾ ▶◆ Hinged vane 65 x 200 mm (2.56 x 7.87 inch) ¹¹⁾¹²⁾ ◆ Rectangular 50 x 150 mm (1.97 x 5.91 inch) ¹³⁾ ◆ Rectangular 50 x 250 mm (1.97 x 9.84 inch) ¹³⁾ ◆ Rectangular 98 x 150 mm (3.86 x 5.91 inch) ¹³⁾¹²⁾ ◆ Rectangular 98 x 250 mm (3.86 x 9.84 inch) ¹³⁾¹²⁾ ◆ Rectangular 50 x 98 mm (1.97 x 3.86 inch) ¹³⁾ ◆	A B D E F G H	Heating of enclosure ¹⁾²⁾ Signal bulb inserted in M20 cable gland ¹⁾	A35 A20 K01
Approvals CSA/FM Dust Ignition Proof, C-TICK ▶◆ ATEX II 1/2 D, C-TICK ▶◆ CSA/FM General Purpose, C-TICK ◆ CE, C-TICK ◆ IEC Ex ta/tb IIIC ◆	1 2 3 4 5	Stainless steel tag [100 x 45 mm (3.94 x 1.77 inch)]: Measuring-point number/identification (max. 27 characters); specify in plain text	Y14
¹⁾ Available with approval options 3 and 4 only, up to max. 0.5 bar ²⁾ Not available with process connections A, C, E ³⁾ Available with configurations 7ML5726-5QB12-2BA2 or 7ML5726-5QC12-2BA1 only ⁴⁾ Available with process pressure 1 and 2 only ⁵⁾ Available with process temperature 1 only ⁶⁾ Available with process connections A ... E only, process pressure 1 and process temperature 1 only ⁷⁾ Extension and vane will also change to 316L, only for process connection B, D, F ... L and vane A ⁸⁾ Available with measuring vane options A, D, E, H only ⁹⁾ Available with process pressure 1 and process temperature 1 only ¹⁰⁾ Available with process connections B, D, F ... L, and vane A only ¹¹⁾ Add 16 mm (0.63 inch) to extension length ¹²⁾ Available with extension length option 2 ...4 only ¹³⁾ Available with process connections F ... K only ◆ We can offer shorter delivery times for configurations designated with the Quick Ship Symbol ◆. For details see page 9/5 in the appendix. ▶ Available ex stock		Additional Operating Instructions Article No. 7ML1998-5FS62 Multi-language This device is shipped with the Siemens Milltronics manual DVD containing the 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 inch) Hinged vane, 65 x 200 mm (2.56 x 7.87 inch)	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 4 only ²⁾ Available with power supply options A, C, E, G, J, K, L, N ³⁾ Available up to 250 °C (482 °F). This option does not automatically implement a food conform design.	

Level Measurement

Point level measurement – Rotation paddle switches

SITRANS LPS200

Selection and Ordering data Article No. Ord. code

SITRANS LPS200, cable extension Rotary paddle switch for level detection in bulk solids Cable extension for increased length in top-mounted applications	7ML5727-	
Process temperature Up to 80 °C (176 °F)	1	
Up to 150 °C (302 °F)	2	
Up to 250 °C (482 °F)	3	
Up to 600 °C (1 112 °F) ^{1) 2)}	4	
Up to 80 °C (176 °F) basic version ³⁾	5	
Power supply 230 V AC, 1 rev/min.	A	
230 V AC, 1 rev/min., fail-safe	B	
230 V AC, 5 rev/min.	C	
230 V AC, 5 rev/min., fail-safe	D	
115 V AC, 1 rev/min.	E	
115 V AC, 1 rev/min., fail-safe	F	
115 V AC, 5 rev/min.	G	
115 V AC, 5 rev/min., fail-safe	H	
48 V AC, 1 rev/min.	J	
24 V AC, 1 rev/min.	K	
24 V DC, 1 rev/min.	L	
24 V DC, 1 rev/min., fail-safe	M	
24 V DC, 5 rev/min.	N	
24 V DC, 5 rev/min., fail-safe	P	
Switch selectable 230 V AC/115 V AC/24 V DC multivoltage, 1 rev/min.	Q	
Switch selectable 230 V AC/115 V AC/24 V DC multivoltage, 5 rev/min.	R	
Process connection <u>Threaded</u> G 1¼" [(BSPP), EN ISO 228-1]	A	
G 1½" [(BSPP), EN ISO 228-1]	B	
1¼" NPT [(Taper), ANSI/ASME B1.20.1]	C	
1½" NPT [(Taper), ANSI/ASME B1.20.1]	D	
<u>Flanged</u> DN 32 PN 6, EN 1092-1 ⁴⁾	E	
DN 100 PN 6, EN 1092-1 ⁴⁾	F	
DN 100 PN 16, EN 1092-1	G	
2" ASME 150 lb B16.5	H	
3" ASME 150 lb B16.5	J	
4" ASME 150 lb B16.5	K	
Process pressure Up to 0.5 bar (7.25 psi)	1	
Up to 5 bar (72.5 psi)	2	
Up to 10 bar (145 psi)	3	
Process connection material Aluminum ⁵⁾	1	
Stainless steel, threads 303 (1.4305), flanges 321 (1.4541)	2	
Cable extension length Standard cable length, 2 000 mm (78.74 inch)	0	
<u>Add Order code Y01 and plain text:</u> "Insertion length ... mm" 500 ... 1 000 mm (19.69 ... 39.37 inch)	1	
Cable length 1 001 ... 2 000 mm (39.41 ... 78.74 inch)	2	
Cable length 2 001 ... 3 000 mm (78.78 ... 118.11 inch)	3	
Cable length 3 001 ... 4 000 mm (118.15 ... 157.48 inch)	4	
Cable length 4 001 ... 5 000 mm (157.52 ... 196.85 inch)	5	
Cable length 5 001 ... 6 000 mm (196.89 ... 236.22 inch)	6	
Cable length 6 001 ... 7 000 mm (236.26 ... 275.59 inch)	7	
Cable length 7 001 ... 10 000 mm (275.63 ... 393.70 inch)	8	
Without extension	9	N1A

Selection and Ordering data Article No. Ord. code

SITRANS LPS200, cable extension Rotary paddle switch for level detection in bulk solids Cable extension for increased length in top-mounted applications	7ML5727-	
Measuring vane Boot shaped, 35 x 106 mm (1.38 x 4.17 inch) ⁶⁾	A	
Hinged vane, 65 x 200 mm (2.56 x 7.87 inch) ⁶⁾	B	
Boot shaped, 28 x 98 mm (1.10 x 3.86 inch) ⁷⁾	C	
Rectangular 50 x 150 mm (1.97 x 5.91 inch) ⁷⁾	D	
Rectangular 50 x 250 mm (1.97 x 9.84 inch) ⁷⁾	E	
Rectangular 98 x 150 mm (3.86 x 5.91 inch) ⁷⁾	F	
Rectangular 50 x 98 mm (1.97 x 3.86 inch) ⁷⁾	G	
Approvals CSA/FM Dust Ignition Proof, C-TICK	A	
ATEX II 1/2 D, C-TICK	B	
CSA/FM General Purpose, C-TICK	C	
CE, C-TICK	D	
IEC Ex ta/tb IIIC	E	

¹⁾ Available with approval option C and D only, up to max. 0.5 bar

²⁾ Not available with process connections A, C, E

³⁾ Only available with configurations 7ML5727-5QC12-0AA0 or 7ML5727-5QB12-0AB0

⁴⁾ Available with process pressure 1 and 2 only

⁵⁾ Available with process connections A ... E only, process pressure 1 and process temperature 1 only

⁶⁾ Add 16 mm (0.63 inch) to extension length

⁷⁾ Available with process connections F ... K only

◆ We can offer shorter delivery times for configurations designated with the Quick Ship Symbol ◆. For details see page 9/5 in the appendix.

Level Measurement

Point level measurement – Rotation paddle switches

SITRANS LPS200

Selection and Ordering data	Order code
Further Designs	
Please add "-Z" to Article No. and specify Order code(s).	
Total insertion length: Enter the total insertion length in plain text description, max. 10 000 mm (393.70 inch)	Y01
Stainless steel tag [100 x 45 mm (3.94 x 1.77 inch)]; Measuring-point number/identification (max. 27 characters); specify in plain text	Y14
Reinforced cable (max. 28 kN pulling force) ¹⁾	P01
Heating of enclosure ²⁾³⁾	A35
Signal bulb inserted in M20 cable gland ²⁾	A20
Food grade materials (in contact with process), according to 1935/2004/EC, with FDA conform shaft sealing ⁴⁾	K01
Additional Operating Instructions	
Multi-language This device is shipped with the Siemens Milltronics manual DVD containing the ATEX Quick Start and Operating Instructions library.	Article No. 7ML1998-5FS62
Spare Parts	
Motor gear /PLC, multi-voltage	7ML1830-1KG
Replacement vane, boot shape, 35 x 106 mm (1.38 x 4.17 inch)	7ML1830-1KH
Hinged vane, 65 x 200 mm (2.56 x 7.87 inch)	7ML1830-1KJ
Rope extension kit, 2 m (6.56 ft)	7ML1830-1KK
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	7ML5727-5QB12-0AB0
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	7ML5727-5QC12-0AA0

¹⁾ Available only for process temperature up to 80 °C (176 °F) and process connection material 2

²⁾ Available with approval option D only

³⁾ Available with power supply options A, C, E, G, J, K, L, N only

⁴⁾ Available up to 250 °C (482 °F). This option does not automatically implement a food conform design.

Level Measurement

Point level measurement – Rotation paddle switches

SITRANS LPS200

Selection and Ordering data

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 and rotate horizontally in side mount applications

Process temperature

Up to 80 °C (176 °F)

Up to 150 °C (302 °F)

Up to 250 °C (482 °F)

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

Flanged

DN 100 PN 6, EN 1092-1¹⁾

DN 100 PN 16, EN 1092-1

4" ASME 150 lb B16.5

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

Stainless steel 303/321 (1.4305/1.4541)

Extension length

125 mm (4.92 inch)

150 mm (5.91 inch)

200 mm (7.87 inch)

250 mm (9.84 inch)

300 mm (11.81 inch)

Measuring vane

Rectangular vane, 50 x 98 mm (1.97 x 3.86 inch)

Rectangular vane, 50 x 150 mm (1.97 x 5.91 inch)

Rectangular vane, 50 x 250 mm (1.97 x 9.84 inch)

Rectangular vane 98 x 150 mm (3.86 x 5.91 inch)

Rectangular vane 98 x 250 mm (3.86 x 9.84 inch)

Hinged vane, 65 x 200 mm (2.56 x 7.87 inch)

Approvals

CSA/FM Dust Ignition Proof, C-TICK

ATEX II 1/2 D, C-TICK

CSA/FM General Purpose, C-TICK

CE, C-TICK

IEC Ex ta/tb IIIC

Article No.

7ML5728-

0

1

2

3

A

B

C

D

E

F

G

H

J

K

L

M

N

P

Q

R

A

B

C

1

2

3

1

2

3

A

B

C

D

E

F

A

B

C

D

E

A

B

C

D

E

A

B

C

D

E

A

B

C

D

E

A

B

C

D

E

Selection and Ordering data

Further Designs

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

Heating of enclosure¹⁾²⁾

A35

Signal bulb inserted in M20 cable gland¹⁾

A20

Food grade materials (in contact with process), according to 1935/2004/EC, with FDA conform shaft sealing³⁾

K01

Stainless steel tag [100 x 45 mm (3.94 x 1.77 inch)]: Measuring-point number/identification (max. 27 characters); specify in plain text

Y14

Additional Operating Instructions

Multi-language
This device is shipped with the Siemens Milltronics manual DVD containing the ATEX Quick Start and Operating Instructions library.

Article No.

7ML1998-5FS62

Spare Parts

Motor gear /PLC, multi-voltage

7ML1830-1KG

Replacement vane, boot shape, 35 x 106 mm (1.38 x 4.17 inch)

7ML1830-1KH

Hinged vane, 65 x 200 mm (2.56 x 7.87 inch)

7ML1830-1KJ

¹⁾ Available with approval option D only

²⁾ Available with power supply options A, C, E, G, J, K, L, N only

³⁾ This option does not automatically implement a food conform design

Level Measurement

Point level measurement – Rotation paddle switches

SITRANS LPS200

Selection and Ordering data	Article No. Ord. code	Selection and Ordering data	Article No. Ord. code
SITRANS LPS200, rigid extension Rotary paddle switch for top mount point level detection in bulk solids	7ML5730-	SITRANS LPS200, rigid extension Rotary paddle switch for top mount point level detection in bulk solids	7ML5730-
Process temperature Up to 80 °C (176 °F) ● 1 Up to 150 °C (302 °F) ● 2 Up to 250 °C (482 °F) ● 3 Up to 600 °C (1 112 °F) ^{1) 2)} ● 4		3 251 ... 3 500 mm (127.99 ... 137.80 inch) ● N 3 501 ... 3 750 mm (137.83 ... 147.64 inch) ● P 3 751 ... 4 000 mm (147.67 ... 157.48 inch) ● Q	
Power supply 230 V AC, 1 rev/min. ● A 230 V AC, 1 rev/min., fail-safe ● B 230 V AC, 5 rev/min. ● C 230 V AC, 5 rev/min., fail-safe ● D 115 V AC, 1 rev/min. ● E 115 V AC, 1 rev/min., fail-safe ● F 115 V AC, 5 rev/min. ● G 115 V AC, 5 rev/min., fail-safe ● H 48 V AC, 1 rev/min. ● J 24 V AC, 1 rev/min. ● K 24 V DC, 1 rev/min. ● L 24 V DC, 1 rev/min., fail-safe ● M 24 V DC, 5 rev/min. ● N 24 V DC, 5 rev/min., fail-safe ● P Switch selectable 230 V AC/115 V AC/24 V DC multivoltage, 1 rev/min. ● Q Switch selectable 230 V AC/115 V AC/24 V DC multivoltage, 5 rev/min. ● R		Stainless steel 303 (1.4305) 250 ... 500 mm (9.84 ... 19.69 inch) ● R 501 ... 750 mm (19.72 ... 29.53 inch) ● S 751 ... 1 000 mm (29.57 ... 39.37 inch) ● T 1 001 ... 1 500 mm (39.41 ... 59.05 inch) ● U 1 501 ... 2 000 mm (59.09 ... 78.74 inch) ● V 2 001 ... 2 500 mm (78.78 ... 98.42 inch) ● W 2 501 ... 3 000 mm (98.46 ... 118.11 inch) ● X 3 001 ... 4 000 mm (118.15 ... 157.48 inch) ● Y Stainless steel 316L (1.4404) 250 ... 500 mm (9.84 ... 19.69 inch) ● Z P1A 501 ... 750 mm (19.72 ... 29.53 inch) ● Z P1B 751 ... 1 000 mm (29.57 ... 39.37 inch) ● Z P1C 1 001 ... 1 500 mm (39.41 ... 59.05 inch) ● Z P1D 1 501 ... 2 000 mm (59.09 ... 78.74 inch) ● Z P1E 2 001 ... 2 500 mm (78.78 ... 98.42 inch) ● Z P1F 2 501 ... 3 000 mm (98.46 ... 118.11 inch) ● Z P1G 3 001 ... 4 000 mm (118.5 ... 157.48 inch) ● Z P1H	
Process connection Threaded G 1¼" [(BSPP), EN ISO 228-1] ● A G 1½" [(BSPP), EN ISO 228-1] ● B 1¼" NPT [(Taper), ANSI/ASME B1.20.1] ● C 1½" NPT [(Taper), ANSI/ASME B1.20.1] ● D Flanged DN 32 PN 6, EN 1092-1 ³⁾ ● E DN 100 PN 6, EN 1092-1 ³⁾ ● F DN 100 PN 16, EN 1092-1 ● G 2" ASME 150 lb B16.5 ● H 3" ASME 150 lb B16.5 ● J 4" ASME 150 lb B16.5 ● K 2" Tri-clamp 2" (DN 50) ISO2854 ⁴⁾ ● L		Measuring vane Boot shaped, 35 x 106 mm (1.34 x 4.17 inch) ¹²⁾ ● A Hinged vane, 60 x 200 mm (2.36 x 7.87 inch) ¹²⁾ ● B Rectangular 50 x 150 mm (1.97 x 5.91 inch) ¹³⁾ ● C Rectangular 50 x 250 mm (1.97 x 9.84 inch) ¹³⁾ ● D Rectangular 98 x 150 mm (3.86 x 5.91 inch) ¹³⁾ ● E Rectangular 98 x 250 mm (3.86 x 9.84 inch) ¹³⁾ ● F Rectangular 50 x 98 mm (1.97 x 3.86 inch) ¹³⁾ ● G	
Process pressure Up to 0.5 bar (7.25 psi) ● 1 Up to 5 bar (72.5 psi) ● 2 Up to 10 bar (145 psi) ● 3		Approvals CSA/FM Dust Ignition Proof, C-TICK ● 1 ATEX II 1/2 D, C-TICK ● 2 CSA/FM General Purpose, C-TICK ● 3 CE, C-TICK ● 4 IEC Ex ta/tb IIIC ● 5	
Process connection material Aluminum ⁵⁾ ● 1 Stainless steel, threads 303 (1.4305), flanges 321 (1.4541), Tri-clamp 304 (1.4301) ● 2 Stainless steel 316L (1.4404) ⁶⁾ ● 3			
Extension material (protection tube) Aluminum ^{7) 8)} ● 0 Stainless steel 303 (1.4305) ⁹⁾ ● 1 Stainless steel 316L (1.4404) ^{10) 11)} ● 2			
Extension length Aluminum 250 ... 500 mm (9.84 ... 19.69 inch) ● A 501 ... 750 mm (19.72 ... 29.53 inch) ● B 751 ... 1 000 mm (29.57 ... 39.37 inch) ● C 1 001 ... 1 250 mm (39.41 ... 42.21 inch) ● D 1 251 ... 1 500 mm (49.25 ... 59.06 inch) ● E 1 501 ... 1 750 mm (59.09 ... 68.90 inch) ● F 1 751 ... 2 000 mm (68.94 ... 78.74 inch) ● G 2 001 ... 2 250 mm (78.78 ... 88.58 inch) ● H 2 251 ... 2 500 mm (88.62 ... 98.43 inch) ● J 2 501 ... 2 750 mm (98.46 ... 108.27 inch) ● K 2 751 ... 3 000 mm (108.31 ... 118.11 inch) ● L 3 001 ... 3 250 mm (118.15 ... 127.95 inch) ● M			

1) Available with approval options 3 and 4 only, up to max. 0.5 bar

2) Not available with process connection A, C, E

3) Available with process pressure 1 and 2 only

4) Available with process temperature 1 only

5) Available with process connections A ... E, process pressure 1 and process temperature 1 only

6) Extension and vane will also change to 316L, only for process connection B, D, F ... L and vane A

7) Available with process pressure 1 and process temperature 1 only

8) Available with extension length options A ... Q only

9) Available with extension length options R ... Y only

10) Only for process connection B, D, F ... L and vane A, process connection material 3. Available with extension length options 1 ... 8 only.

11) Only available with seal at tube end, option P06 ... P09

12) Add 16 mm (0.63 inch) to extension length

13) Available with process connections F ... K only

● We can offer shorter delivery times for configurations designated with the Quick Ship Symbol ●. For details see page 9/5 in the appendix.

Level Measurement

Point level measurement – Rotation paddle switches

SITRANS LPS200

Selection and Ordering data	Order code
Further Designs	
Please add "-Z" to Article No. and specify Order code(s).	
Total insertion length: Enter the total insertion length in plain text description, max. 4 000 mm (157.48 inch)	Y01
Stainless steel tag [100 x 45 mm (3.94 x 1.77 inch)]; Measuring-point number/identification (max. 27 characters); specify in plain text	Y14
Heating of enclosure ¹⁾²⁾	A35
Signal bulb inserted in M20 cable gland ¹⁾	A20
Food grade materials (in contact with process), according to 1935/2004/EC, with FDA conform shaft sealing ³⁾⁴⁾	K01
<u>Seal at tube end for ingress protection and shaft stability</u>	
Max. temperature 80 °C (176 °F)	P06
Max. temperature 150 °C (302 °F)	P07
Max. temperature 250 °C (482 °F)	P08
Max. temperature 600 °C (1 112 °F)	P09
Sliding sleeve (standard, max. pressure 0.5 bar) ¹⁾⁵⁾	P12
Sliding sleeve (pressure tight, for over-pressure application starting from 1 bar max., dependent on pressure option ordered) ⁶⁾	P13
Additional Operating Instructions	
Article No.	
Multi-language This device is shipped with the Siemens Milltronics manual DVD containing the ATEX Quick Start and Operating Instructions library.	7ML1998-5FS62
Spare Parts	
Motor gear/PLC, multi-voltage	7ML1830-1KG
Replacement vane, boot shape, 35 x 106 mm (1.38 x 4.17 inch)	7ML1830-1KH
Hinged vane, 65 x 200 mm (2.56 x 7.87 inch)	7ML1830-1KJ

¹⁾ Available with approval option 4 only

²⁾ Available with power supply options A, C, E, G, J, K, L, N only

³⁾ Available when ordered with ingress protection seal P06 ... P09 only

⁴⁾ Available up to 250 °C (482 °F). This option does not automatically implement a food conform design.

⁵⁾ Available with process pressure 1 only

⁶⁾ Available up to 250 °C (482 °F)

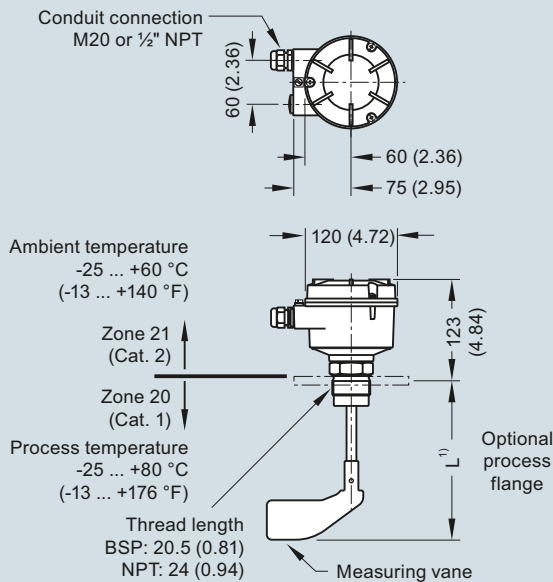
Level Measurement

Point level measurement – Rotation paddle switches

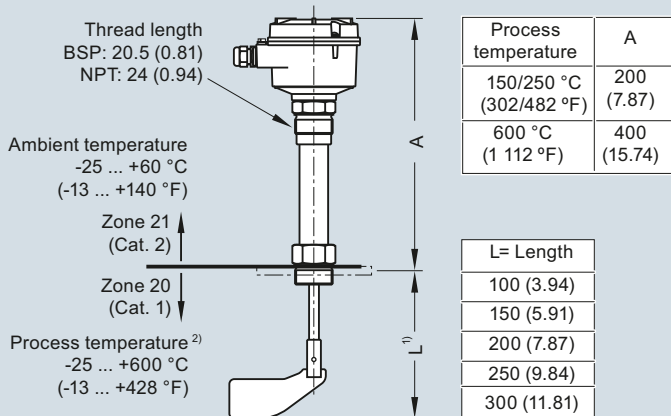
SITRANS LPS200

Dimensional drawings

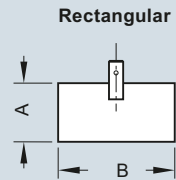
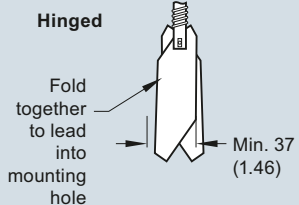
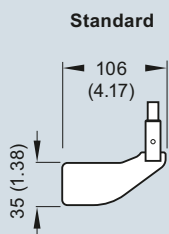
Standard model: compact version



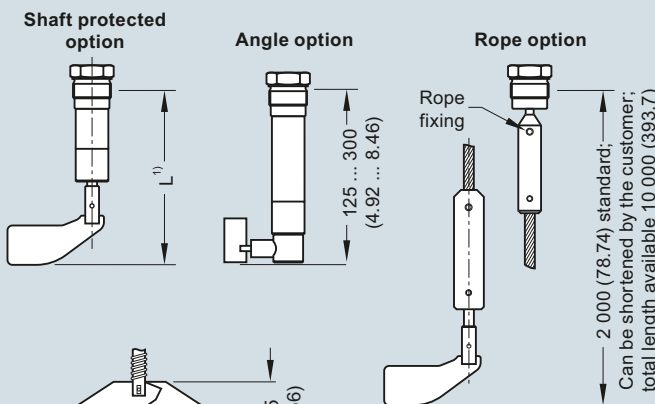
High temperature model: compact version



Measuring vanes



Rectangular vane options	
A	B
50 (1.97)	98 (3.86)
50 (1.97)	150 (5.90)
50 (1.97)	250 (9.84)
98 (3.86)	150 (5.90)
98 (3.86)	250 (9.84)



- 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.

Vane	Completely covered with material		Covered up to 10 cm (3.93 inch) with material	
	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)

SITRANS LPS200, dimensions in mm (inch)

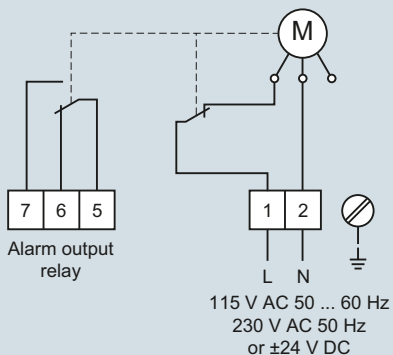
Level Measurement

Point level measurement – Rotation paddle switches

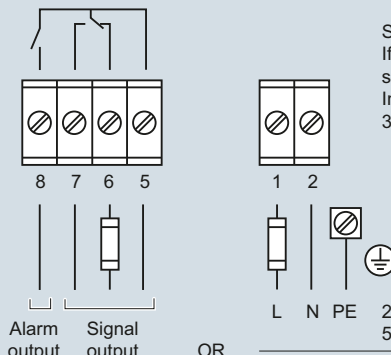
SITRANS LPS200

Schematics

Switch selectable connection

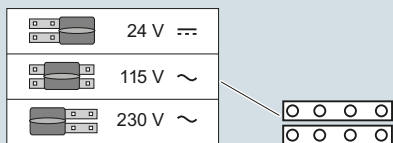


AC or DC version, SPDT relay, fail-safe



Switching and timing behaviour:
If the vane is not covered, the rotating vane shaft will send pulses at 20 second intervals. In case of fault, the pulses are missed. After 30 seconds, the alarm relay will open.

Voltage selector



SITRANS LPS200 connections

4