

Overview



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

Benefits

- Proven paddle switch technology for bulk solids
- High integrity mechanical seal
- Universal power supply options available
- 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
- Functional Safety (SIL 2). Device suitable for use in accordance with IEC 61508 and IEC 61511

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 15.06 g/l (0.94 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

Level Measurement

Point level measurement

Rotation paddle switches / SITRANS LPS200

Selection and ordering data

	Article No.	Ord. code
SITRANS LPS200 Rotary paddle point level switch, compact design Level detection in solids. Compact, side or top mount with extension options to 300 mm (11.81 inch).	7ML5725- ● ● ● ● ● - ● ● ● 0	● ● ●
Click on the Article No. for the online configuration in the PIA Life Cycle Portal.		
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 ¹⁾³⁾	5	
Up to 80 °C (176 °F) basic version stainless steel ¹⁾⁴⁾	6	
Power supply		
230 V AC, 1 rev/min.	A	
230 V AC, 5 rev/min.	C	
115 V AC, 1 rev/min.	E	
115 V AC, 5 rev/min.	G	
48 V AC, 1 rev/min.	J	
24 V AC, 1 rev/min.	K	
24 V DC, 1 rev/min.	L	
24 V DC, 5 rev/min.	N	
48 V AC, 5 rev/min.	Z	J 1 B
24 V AC, 5 rev/min.	Z	J 1 E
Universal Voltage, 1 rev/min.	Z	J 2 A
Universal Voltage, 1 rev/min., fail-safe	Z	J 2 B
Universal Voltage, 5 rev/min.	Z	J 2 C
Universal Voltage, 5 rev/min. fail-safe	Z	J 2 D
Process connection		
<u>Threaded</u>		
G 1¼" [(BSPP), EN ISO 228-1]	A	
G 1" [(BSPP), EN ISO 228-1]	B	
G 1½" [(BSPP), EN ISO 228-1]	C	
1" NPT [(Taper), ANSI/ASME B1.20.1]	D	
1¼" NPT [(Taper), ANSI/ASME B1.20.1]	E	
1½" NPT [(Taper), ANSI/ASME B1.20.1]	F	
<u>Flanged</u>		
DN 32 PN 6, EN 1092-1, flat face ⁵⁾	G	
DN 100 PN 6, EN 1092-1, flat face ⁵⁾	H	
DN 100 PN 16, EN 1092-1, flat face	J	
2" ASME 150 lb B16.5, raised face	K	
3" ASME 150 lb B16.5, raised face	L	
4" ASME 150 lb B16.5, raised face	M	
2" Tri-clamp (DN 50) ISO 2852 ⁶⁾	N	
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
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

Selection and ordering data (continued)

	Article No.	Ord. code
SITRANS LPS200 Rotary paddle point level switch, compact design Level detection in solids. Compact, side or top mount with extension options to 300 mm (11.81 inch).	7ML5725-●●●●●-●●●●0	●●●
Rectangular, 50 x 250 mm (1.97 x 9.84 inch) ¹²⁾		E
Rectangular, 98 x 150 mm (3.86 x 5.91 inch) ¹¹⁾¹²⁾		F
Rectangular, 98 x 250 mm (3.86 x 9.84 inch) ¹¹⁾¹²⁾		G
Rectangular, 50 x 98 mm (1.97 x 3.86 inch) ¹²⁾		H
Approvals		
CSA/FM Dust Ignition Proof, RCM		A
ATEX II ½ D, RCM		B
CSA/FM General Purpose, RCM, CE		C
CE, RCM		D
IEC Ex ta/tb IIIC		E
EAC Ex ta/tb IIIC Da/Db		F

Selection and Ordering data	Order code
Further Designs	
Please add "-Z" to Article No. and specify Order code(s).	
Heating of enclosure ¹³⁾¹⁴⁾	A35
Signal bulb inserted in M20 cable gland ¹³⁾	A20
Food grade materials (in contact with process), according to 1935/2004/EC, with FDA conform shaft sealing ¹⁵⁾	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
Functional Safety (SIL 2). Device suitable for use in accordance with IEC 61508 and IEC 61511 ¹⁷⁾¹⁸⁾	C20
Factory test certificate - M to DIN 55350, Part 18	C11

Spare Parts and Accessories	Article No.
Operating Instructions	
All literature is available to download for free, in a range of languages, at http://www.siemens.com/processinstrumentation/documentation	
Spare Parts	
Replacement vane, boot shape, 35 x 106 mm (1.38 x 4.17 inch)	7ML1830-1KH
Hinged vane, 98 x 200 mm (3.86 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) ¹⁶⁾	7ML5711-0AA
Extension: 1 000, 900, 800, 700, 600 mm (39.4, 35.4, 31.5, 27.6, 23.6 inch) ¹⁶⁾	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) ¹⁶⁾	7ML5711-2AA
Rope extension kit, 2 m (6.56 ft)	7ML1830-1KK
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	7ML5725-5EE11-2A-C0
SITRANS LPS200, compact for up to 80 °C (176 °F), stainless steel, with power supply Z (J2A), process connection C, process pressure 1, process connection material 2, extension length 2, measuring vane A, and approval B	7ML5725-6ZC12-2-AB0 J2A
SITRANS LPS200, compact for up to 80 °C (176 °F), stainless steel, with power supply Z (J2A), process connection E, process pressure 1, process connection material 2, extension length 2, measuring vane A, and approval A	7ML5725-6ZE12-2-AA0 J2A

¹⁾ Available with Approval options C and D only, up to 0.5 bar.

Level Measurement

Point level measurement

Rotation paddle switches / SITRANS LPS200

Selection and ordering data (continued)

- 2) Not available with Process connections A, B, D, E, and G.
 3) Only available with the following configurations 7ML5725-5AC11-2AD0 or 7ML5725-5EE11-2AC0.
 4) Only available with the following configurations 7ML5725-6ZC12-2AB0 J2A or 7ML5725-6ZE12-2AA0 J2A.
 5) Available with Process pressure options 1 and 2 only.
 6) Available with Process temperature option 1 only.
 7) Available with Process connection options A ... F only, Process pressure option 1 and Process temperature options 1 and 5 only.
 8) Available with Process connection options C, F, H ... N and Measuring vane options A and B.
 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 lengths 2, 3, 4, 5.
 12) Available with Process connection options H ... M only.
 13) Available with Approval option D only.
 14) Available only with Power supply options J2A, J2B, J2C, and J2D.
 15) Available up to 250 °C (482 °F).
 16) Pendulum shaft 500 mm/1 000 mm/1 500 mm should be selected with 150 mm standard length 2 and vane A (35 x 106) to get to the desired lengths.
 17) Available with Power supply options J2A and J2C only.
 18) Available with Approval options A, B, C, D, and E only. Approvals A and C with FM only.

	Article No.	Ord. code
SITRANS LPS200 Rotary paddle point level switch, shaft protected design Level detection in aggressive solids. Compact, side or top mount, with enhanced shaft protection. Extension options to 300 mm (11.81 inch).	7ML5726- ● ● ● ● ● - ● ● ● ● ●	● ● ●
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, 5 rev/min.	C	
115 V AC, 1 rev/min.	E	
115 V AC, 5 rev/min.	G	
48 V AC, 1 rev/min.	J	
24 V AC, 1 rev/min.	K	
24 V DC, 1 rev/min.	L	
24 V DC, 5 rev/min.	N	
48 V AC, 5 rev/min.	Z	J 1 B
24 V AC, 5 rev/min.	Z	J 1 E
Universal voltage, 1 rev/min.	Z	J 2 A
Universal voltage, 1 rev/min., fail-safe	Z	J 2 B
Universal voltage, 5 rev/min.	Z	J 2 C
Universal voltage, 5 rev/min., fail-safe	Z	J 2 D
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, flat face ⁴⁾	E	
DN 100 PN 6, EN 1092-1, flat face ⁴⁾	F	
DN 100 PN 16, EN 1092-1, flat face	G	
2" ASME 150 lb B16.5, raised face	H	
3" ASME 150 lb B16.5, raised face	J	
4" ASME 150 lb B16.5, raised face	K	
2" Tri-clamp (DN 50) ISO 2852 ⁵⁾	L	
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 ⁶⁾	1	
Stainless steel, threads 303 (1.4305), flanges 321 (1.4541), Tri-clamp 304 (1.4301) ¹⁸⁾	2	

Selection and ordering data (continued)

	Article No.	Ord. code
SITRANS LPS200 Rotary paddle point level switch, shaft protected design	7ML5726-●●●●●-●●●●●	●●●
Level detection in aggressive solids. Compact, side or top mount, with enhanced shaft protection. Extension options to 300 mm (11.81 inch).		
Stainless steel 316L (1.4404) ⁷⁾	3	
Extension length		
150 mm (5.91 inch) ⁸⁾	1	
200 mm (7.87 inch)	2	
250 mm (9.84 inch)	3	
300 mm (11.81 inch)	4	
Extension material (protection tube)		
Aluminum ⁹⁾	A	
Stainless steel 303 (1.4305)	B	
Stainless steel 316L (1.4404) ¹⁰⁾	C	
Measuring vane		
Boot shaped, 35 x 106 mm (1.38 x 4.17 inch) ¹¹⁾	A	
Hinged vane, 65 x 200 mm (2.56 x 7.87 inch) ¹¹⁾¹²⁾	B	
Rectangular, 50 x 150 mm (1.97 x 5.91 inch) ¹³⁾	D	
Rectangular, 50 x 250 mm (1.97 x 9.84 inch) ¹³⁾	E	
Rectangular, 98 x 150 mm (3.86 x 5.91 inch) ¹²⁾¹³⁾	F	
Rectangular, 98 x 250 mm (3.86 x 9.84 inch) ¹²⁾¹³⁾	G	
Rectangular, 50 x 98 mm (1.97 x 3.86 inch) ¹³⁾	H	
Approvals		
CSA/FM Dust Ignition Proof, RCM		1
ATEX II ½ D, RCM		2
CSA/FM General Purpose, RCM, CE		3
CE, RCM		4
IEC Ex ta/tb IIIC		5
EAC Ex ta/tb IIIC Da/Db		6

Selection and Ordering data	Order code
Further Designs	
Please add "-Z" to Article No. and specify Order code(s).	
Heating of enclosure ¹⁴⁾¹⁵⁾	A35
Signal bulb inserted in M20 cable gland ¹⁴⁾	A20
Food grade materials (in contact with process), according to 1935/2004/EC, with FDA conform shaft sealing ¹⁶⁾	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
Functional Safety (SIL 2). Device suitable for use in accordance with IEC 61508 and IEC 61511. ¹⁷⁾¹⁹⁾	C20
Factory test certificate - M to DIN 55350, Part 18	C11

Spare Parts	Article No.
Operating Instructions	
Note: The Operating Instructions should be ordered as a separate line on the order. All literature is available to download for free, in a range of languages, at http://www.siemens.com/processinstrumentation/documentation	
Spare Parts	
Replacement vane, boot shape, 35 x 106 mm (1.38 x 4.17 inch)	7ML1830-1KH
Hinged vane, 98 x 200 mm (3.86 x 7.87 inch)	7ML1830-1KJ
SITRANS LPS200, extended for up to 80 °C (176 °F), power supply Z (J2A), process connection B, process pressure 1, process connection material 2, extension length 2, extension material B, measuring vane A, and approval 2	7ML5726-5ZB12-2B-A2 J2A

Level Measurement

Point level measurement

Rotation paddle switches / SITRANS LPS200

Selection and ordering data (continued)

Spare Parts	Article No.
SITRANS LPS200, extended for up to 80 °C (176 °F), power supply Z (J2A), process connection C, process pressure 1, process connection material 2, extension length 2, extension material B, measuring vane A, and approval 1	7ML5726-5ZC12-2B-A1 J2A

- 1) Available with Approval options 3 and 4 only and up to max 0.5 bar.
- 2) Not available with Process connection options A, C, E.
- 3) Only available with the following configurations 7ML5726-5ZB12-2BA2 J2A or 7ML5726-5ZC12-2BA1 J2A.
- 4) Available with Process pressure options 1 and 2 only.
- 5) Available with Process temperature option 1 only.
- 6) Available with Process connection options A ... E only, available with process pressure option 1 only, and process temperature option 1 only.
- 7) Extension and vane will also change to 316L, only for Process connection options B, D, F ... L and vane A.
- 8) Available with Measuring vane options A, D, E, H only.
- 9) Available with Process pressure option 1 and process temperature option 1 only.
- 10) Available with Process connection options B, D, F ... L and vane A.
- 11) Add 16 mm (0.63 inch) to extension length.
- 12) Available with Extension length options 2 ... 4 only.
- 13) Available with Process connection options F, G, H, J, K only.
- 14) Available with Approval option 4 only.
- 15) Available only with Power supply options J2A, J2B, J2C, and J2D.
- 16) Available up to 250 °C (482 °F).
- 17) Available with Power supply options J2A and J2C only.
- 18) Available with Extension material Stainless steel, threads 303 option B only.
- 19) Available with Approval options 1, 2, 3, 4, and 5 only. Approvals 1 and 3 with FM only.

SITRANS LPS200 Rotary paddle point level switch, cable extension design Level detection in solids. Top mount, with extension options to 10 m (32.80 ft).	Article No.	Ord. code
7ML5727- ● ● ● ● ● - ● ● ● 0 ● ● ●		
Click on the Article No. for the online configuration in the PIA Life Cycle Portal.		
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, 5 rev/min.	C	
115 V AC, 1 rev/min.	E	
115 V AC, 5 rev/min.	G	
48 V AC, 1 rev/min.	J	
24 V AC, 1 rev/min.	K	
24 V DC, 1 rev/min.	L	
24 V DC, 5 rev/min.	N	
48 V AC, 5 rev/min.	Z	J 1 B
24 V AC, 5 rev/min.	Z	J 1 E
Universal voltage, 1 rev/min.	Z	J 2 A
Universal voltage, 1 rev/min., fail-safe	Z	J 2 B
Universal voltage, 5 rev/min.	Z	J 2 C
Universal voltage, 5 rev/min., fail-safe	Z	J 2 D
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, flat face ⁴⁾	E	
DN 100 PN 6, EN 1092-1, flat face ⁴⁾	F	
DN 100 PN 16, EN 1092-1, flat face	G	
2" ASME 150 lb B16.5, raised face	H	
3" ASME 150 lb B16.5, raised face	J	
4" ASME 150 lb B16.5, raised face	K	

Selection and ordering data (continued)

	Article No.	Ord. code
SITRANS LPS200 Rotary paddle point level switch, cable extension design Level detection in solids. Top mount, with extension options to 10 m (32.80 ft).	7ML5727- ● ● ● ● ● - ● ● ● 0	● ● ●
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
Add Order code Y01 and plain text: "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 ¹²⁾		9
		N 1 A
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, RCM		A
ATEX II ½ D, RCM		B
CSA/FM General Purpose, RCM, CE		C
CE, RCM		D
IEC Ex ta/tb IIIC		E
EAC Ex ta/tb IIIC Da/Db		F

Selection and Ordering data	Order code
Further Designs	
Please add "-Z" to Article No. and specify Order code(s).	
Total insertion length:	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) ⁸⁾	P01
Heating of enclosure ⁹⁾¹⁰⁾	A35
Signal bulb inserted in M20 cable gland ⁹⁾	A20
Food grade materials (in contact with process), according to 1935/2004/EC, with FDA conform shaft sealing ¹¹⁾	K01
Functional Safety (SIL 2). Device suitable for use in accordance with IEC 61508 and IEC 61511. ¹³⁾¹⁴⁾	C20
Factory test certificate - M to DIN 55350, Part 18	C11

Level Measurement

Point level measurement

Rotation paddle switches / SITRANS LPS200

Selection and ordering data (continued)

Spare Parts	Article No.
Operating Instructions Note: The Operating Instructions should be ordered as a separate line on the order. All literature is available to download for free, in a range of languages, at http://www.siemens.com/processinstrumentation/documentation	
Spare Parts	
Replacement vane, boot shape, 35 x 106 mm (1.38 x 4.17 inch)	7ML1830-1KH
Hinged vane, 98 x 200 mm (3.86 x 7.87 inch)	7ML1830-1KJ
SITRANS LPS200, cable extension for up to 80 °C (176 °F), power supply Z (J2A), process connection B, process pressure 1, process connection material 2, extension length 0, measuring vane A, and approval B	7ML5727-5ZB12-0-AB0 J2A
SITRANS LPS200, cable extension for up to 80 °C (176 °F), power supply Z (J2A), process connection C, process pressure 1, process connection material 2, extension length 0, measuring vane A, and approval A	7ML5727-5ZC12-0-AA0 J2A

¹⁾ Available with Approval options C and D up to max. 0.5 bar.

²⁾ Not available with Process connections A, C, E.

³⁾ Only available with the following configurations 7ML5727-5ZC12-0AA0 J2A or 7ML5727-5ZB12-0AB0 J2A.

⁴⁾ Available with Process pressure options 1 and 2 only.

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

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

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

⁸⁾ Available only for Process temperature up to 80 °C (176 °F) and Process connection material 2.

⁹⁾ Available with Approval option D.

¹⁰⁾ Available only with Power supply options J2A, J2B, J2C, and J2D.

¹¹⁾ Available up to 250 °C (482 °F).

¹²⁾ Not available with P01 and available with Approval D, mounting kit for rope extension included.

¹³⁾ Available with Power supply options J2A and J2C only.

¹⁴⁾ Available with Approval options A, B, C, D, and E only. Approvals A and C with FM only.

	Article No.	Ord. code
SITRANS LPS200 Rotary paddle point level switch, angled extension design Level detection in aggressive applications. Bottom or side mount with enhanced shaft protection. Extension options to 300 mm (11.81 inch).	7ML5728- ● ● ● ● ● - ● ● ● 0 ● ● ●	
Click on the Article No. for the online configuration in the PIA Life Cycle Portal.		
Process temperature		
Up to 80 °C (176 °F)	1	
Up to 150 °C (302 °F)	2	
Up to 250 °C (482 °F)	3	
Power supply		
230 V AC, 1 rev/min.	A	
230 V AC, 5 rev/min.	C	
115 V AC, 1 rev/min.	E	
115 V AC, 5 rev/min.	G	
48 V AC, 1 rev/min.	J	
24 V AC, 1 rev/min.	K	
24 V DC, 1 rev/min.	L	
24 V DC, 5 rev/min.	N	
48 V AC, 5 rev/min.	Z	J 1 B
24 V AC, 5 rev/min.	Z	J 1 E
Universal voltage, 1 rev/min.	Z	J 2 A
Universal voltage, 1 rev/min., fail-safe	Z	J 2 B
Universal voltage, 5 rev/min.	Z	J 2 C
Universal voltage, 5 rev/min., fail-safe	Z	J 2 D
Process connection		
Flanged		
DN 100 PN 6, EN 1092-1, flat face ¹⁾	A	
DN 100 PN 16, EN 1092-1, flat face	B	
4" ASME 150 lb B16.5, raised face	C	

Selection and ordering data (continued)

	Article No.	Ord. code
SITRANS LPS200 Rotary paddle point level switch, angled extension design Level detection in aggressive applications. Bottom or side mount with enhanced shaft protection. Extension options to 300 mm (11.81 inch).	7ML5728- ● ● ● ● ● - ● ● ● 0 ● ● ●	● ● ●
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		
Stainless steel 303/321 (1.4305/1.4541)		1
Extension length		
125 mm (4.92 inch)		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
Measuring vane		
Rectangular vane, 50 x 98 mm (1.97 x 3.86 inch)		A
Rectangular vane, 50 x 150 mm (1.97 x 5.91 inch)		B
Rectangular vane, 50 x 250 mm (1.97 x 9.84 inch)		C
Rectangular vane, 98 x 150 mm (3.86 x 5.91 inch)		D
Rectangular vane, 98 x 250 mm (3.86 x 9.84 inch)		E
Hinged vane, 65 x 200 mm (2.56 x 7.87 inch)		F
Approvals		
CSA/FM Dust Ignition Proof, RCM		A
ATEX II ½ D, RCM		B
CSA/FM General Purpose, RCM, CE		C
CE, RCM		D
IEC Ex ta/tb IIIC		E
EAC Ex ta/tb IIIC Da/Db		F

Selection and Ordering data	Order code
Further Designs	
Please add "-Z" to Article No. and specify Order code(s).	
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
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
Functional Safety (SIL 2). Device suitable for use in accordance with IEC 61508 and IEC 61511. ⁴⁾⁵⁾	C20
Factory test certificate - M to DIN 55350, Part 18	C11

Spare Parts	Article No.
Operating Instructions	
Note: The Operating Instructions should be ordered as a separate line on the order. All literature is available to download for free, in a range of languages, at http://www.siemens.com/processinstrumentation/documentation	
Spare Parts	
Replacement vane, boot shape, 35 x 106 mm (1.38 x 4.17 inch)	7ML1830-1KH
Hinged vane, 98 x 200 mm (3.86 x 7.87 inch)	7ML1830-1KJ

¹⁾ Available with Process pressure options 1 and 2 only.

²⁾ Available with Approval option D only.

³⁾ Available only with Power supply options J2A, J2B, J2C, and J2D.

Level Measurement

Point level measurement

Rotation paddle switches / SITRANS LPS200

Selection and ordering data (continued)

⁴⁾ Available with Power supply options J2A and J2C only.

⁵⁾ Available with Approval options A, B, C, D, and E only. Approvals A and C with FM only.

	Article No.	Ord. code
SITRANS LPS200 Rotary paddle point level switch, rigid extension design	7ML5730- ● ● ● ● ● - ● ● ● ●	● ● ●
Level detection in solids. Top mount, with extension options to 4 m (13.12 ft).		
Click on the Article No. for the online configuration in the PIA Life Cycle Portal.		
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	
Power supply		
230 V AC, 1 rev/min.	A	
230 V AC, 5 rev/min.	C	
115 V AC, 1 rev/min.	E	
115 V AC, 5 rev/min.	G	
48 V AC, 1 rev/min.	J	
24 V AC, 1 rev/min.	K	
24 V DC, 1 rev/min.	L	
24 V DC, 5 rev/min.	N	
48 V AC, 5 rev/min.	Z	J 1 B
24 V AC, 5 rev/min.	Z	J 1 E
Universal voltage, 1 rev/min.	Z	J 2 A
Universal voltage, 1 rev/min., fail-safe	Z	J 2 B
Universal voltage, 5 rev/min.	Z	J 2 C
Universal voltage, 5 rev/min., fail-safe	Z	J 2 D
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, flat face ³⁾	E	
DN 100 PN 6, EN 1092-1, flat face ³⁾	F	
DN 100 PN 16, EN 1092-1, flat face	G	
2" ASME 150 lb B16.5, raised face	H	
3" ASME 150 lb B16.5, raised face	J	
4" ASME 150 lb B16.5, raised face	K	
2" Tri-clamp (DN 50) ISO 2852 ⁴⁾	L	
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), 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⁾²²⁾		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

Selection and ordering data (continued)

	Article No.	Ord. code
SITRANS LPS200 Rotary paddle point level switch, rigid extension design	7ML5730- ● ● ● ● ● - ● ● ● ● ●	● ● ●
Level detection in solids. Top mount, with extension options to 4 m (13.12 ft).		
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
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
<u>Stainless steel 303 (1.4305)</u>		
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
<u>Stainless steel 316L (1.4404)</u>		
250 ... 500 mm (9.84 ... 19.69 inch)		Z
501 ... 750 mm (19.72 ... 29.53 inch)		Z
751 ... 1 000 mm (29.57 ... 39.37 inch)		Z
1 001 ... 1 500 mm (39.41 ... 59.05 inch)		Z
1 501 ... 2 000 mm (59.09 ... 78.74 inch)		Z
2 001 ... 2 500 mm (78.78 ... 98.42 inch)		Z
2 501 ... 3 000 mm (98.46 ... 118.11 inch)		Z
3 001 ... 4 000 mm (118.5 ... 157.48 inch)		Z
		P 1 A
		P 1 B
		P 1 C
		P 1 D
		P 1 E
		P 1 F
		P 1 G
		P 1 H
Measuring vane		
Boot shaped, 35 x 106 mm (1.34 x 4.17 inch) ¹²⁾		A
Hinged vane, 65 x 200 mm (2.56 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
Approvals		
CSA/FM Dust Ignition Proof, RCM		1
ATEX II ½ D, RCM		2
CSA/FM General Purpose, RCM, CE		3
CE, RCM		4
IEC Ex ta/tb IIIC		5
EAC Ex ta/tb IIIC Da/Db		6

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 ¹⁴⁾ ¹⁵⁾	A35
Signal bulb inserted in M20 cable gland ¹⁴⁾	A20
Food grade materials (in contact with process), according to 1935/2004/EC, with FDA conform shaft sealing ¹⁶⁾ ¹⁷⁾	K01

Level Measurement

Point level measurement

Rotation paddle switches / SITRANS LPS200

Selection and ordering data (continued)

Selection and Ordering data	Order code
Functional Safety (SIL 2). Device suitable for use in accordance with IEC 61508 and IEC 61511. ²⁰⁾²¹⁾	C20
Factory test certificate - M to DIN 55350, Part 18	C11
Optional end of shaft seal for stability and ingress protection	
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 ¹⁴⁾¹⁸⁾	P12
Sliding sleeve: pressure tight, for over-pressure application, dependent on pressure option ordered ¹⁹⁾	P13

Spare Parts	Article No.
Operating Instructions	
Note: The Operating Instructions should be ordered as a separate line on the order. All literature is available to download for free, in a range of languages, at http://www.siemens.com/processinstrumentation/documentation	
Spare Parts	
Replacement vane, boot shape, 35 x 106 mm (1.38 x 4.17 inch)	7ML1830-1KH
Hinged vane, 98 x 200 mm (3.86 x 7.87 inch)	7ML1830-1KJ

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

²⁾ Not available with Process connections A, C, E.

³⁾ Available with Process pressure options 1 and 2 only.

⁴⁾ Available with Process temperature 1 only.

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

⁶⁾ Available with Process connection options B, D, F ... L and measuring vane option 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⁾ Available with Process connection options B, D, F ... L and Measuring vane A, Process connection material 3. Available only with Extension length options P1A ... P1H only.

¹¹⁾ Only available with Seal at tube end options P06 ... P09.

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

¹³⁾ Available with Process connections F, G, H, J, K only.

¹⁴⁾ Available with Approval option 4 only.

¹⁵⁾ Available only with Power supply options J2A, J2B, J2C, and J2D.

¹⁶⁾ Available when ordered with Ingress protection seal options P06 ... P09 only.

¹⁷⁾ Available up to 250 °C (482 °F).

¹⁸⁾ Available with Process pressure option 1 only.

¹⁹⁾ Available up to 250 °C (482 °F).

²⁰⁾ Available with Power supply options J2A and J2C only.

²¹⁾ Available with Approval options 1, 2, 3, 4, and 5 only. Approvals 1 and 3 with FM only.

²²⁾ Internal probe construction is 1.4305, add seal option P09 to prevent ingress.

Technical specifications

SITRANS LPS200	
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 ... +60 °C (-13 ... +140 °F)
• Storage temperature	-40 ... +80 °C (-40 ... +176 °F)
• Installation category	III
• Pollution degree	2
Medium conditions	Bulk solids
• Temperature	
- Standard	-25 ... +80 °C (-13 ... +176 °F)
- Optional	-25 ... +600 °C (-13 ... +1 112 °F)
	Higher temperature version is available. Consult a local sales person for details. For more information, please visit http://www.automation.siemens.com/aspa_app .
• 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/ft ³)
- Optional measuring vane	Can detect down to 15.06 g/l (0.94 lb/ft ³)
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 M20 x 1.5 or 2 x ½" NPT (For FM and CSA approved versions only)
Power supply	
AC or DC versions	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
Universal voltage (DPDT replay)	24 V DC ± 15 % 50 ... 60 Hz, 22 ... 230 V AC, ± 10 %, max. 10 VA
Certificates and approvals	<ul style="list-style-type: none"> • CSA/FM General Purpose • CE • CSA/FM Dust Ignition Proof • ATEX II 1/2 D • RCM • IECex

Level Measurement

Point level measurement

Rotation paddle switches / SITRANS LPS200

Dimensional drawings

Standard model: compact version

Conduit connection
M20 or 1/2" NPT

60 (2.36)
75 (2.95)
120 (4.72)
123 (4.84)

Ambient temperature
-25 ... +60 °C
(-13 ... +140 °F)

Zone 21 (Cat. 2)
Zone 20 (Cat. 1)

Process temperature
-25 ... +80 °C
(-13 ... +176 °F)

Thread length
BSP: 20.5 (0.81)
NPT: 24 (0.94)

Measuring vane

Optional process flange

High temperature model: compact version

Thread length
BSP: 20.5 (0.81)
NPT: 24 (0.94)

Ambient temperature
-25 ... +60 °C
(-13 ... +140 °F)

Zone 21 (Cat. 2)
Zone 20 (Cat. 1)

Process temperature²⁾
-25 ... +600 °C
(-13 ... +428 °F)

Process temperature	A
150/250 °C (302/482 °F)	200 (7.87)
350 °C (662 °F)	300 (11.81)
600 °C (1 112 °F)	400 (15.74)

L= Length
100 (3.94)
150 (5.91)
200 (7.87)
250 (9.84)
300 (11.81)

Measuring vanes

Standard

Hinged

Fold together to lead into mounting hole

Rectangular

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)	

Shaft protected option

Angle option

Rope option

Rope fixing

2 000 (78.74) standard;
Can be shortened by the customer;
total length available 10 000 (393.7)

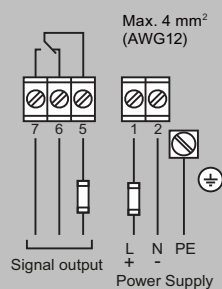
Vane	Completely covered with material		Covered up to 10 cm (3.93 inch) with material	
	Spring adjustment		Spring adjustment	
	Light	Central (factory setting)	Light	Central (factory setting)
Boot shaped 35 x 106 mm	200 g/l (12.5 lb/ft ³)	300 g/l (18.7 lb/ft ³)	100 g/l (6.2 lb/ft ³)	150 g/l (9.4 lb/ft 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 98 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 98 x 200 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.

SITRANS LPS200, dimensions in mm (inch)

Circuit diagrams

AC or DC version



Power supply:

AC version:

24 V or 48 V or 115 V or 230 V 50/60 Hz max. 4 VA
 All voltages $\pm 10\%$ ¹⁾
 Supply voltage as selected.
 External fuse: max 10 A, fast or slow, HBC, 250 V

DC version:

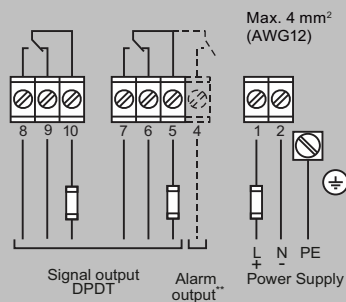
24 V DC $\pm 15\%$ ¹⁾ max. 2.5 W
 External fuse: not required

¹⁾ Including $\pm 10\%$ of EN 61010

Signal output:

Micro switch, SPDT contact
 max. 250 V AC, 5 A, non inductive
 max. 30 V DC, 4 A, non inductive
 External fuse: max 10 A, fast or slow, HBC, 250 V

Universal voltage (DPDT relay)*

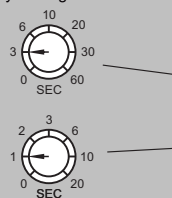


* See manual for universal voltage with SIL.

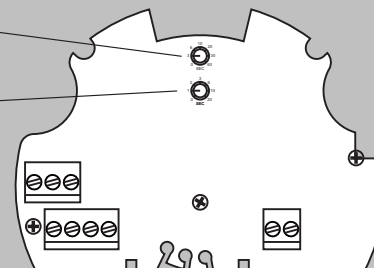
** With option Fail safe alarm (rotation control).
 Contact open when de-energised.
 Fail safe alarm switching and timing behaviour:
 If the vane is not covered, the rotating vane
 shaft will send pulses at 20 second intervals.
 In case of fault, the pulses are missed.
 After 30 seconds, the alarm relay will open.

Signal output: delay

Sensor covered -> free
 Factory setting = 3 sec



Sensor covered -> covered
 Factory setting = 1 sec



SITRANS LPS200 connections