

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

SITRANS LPS200

Selection and ordering data

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).	Article No. 7ML57- ● ● ● ● ● - ● ● ● 0										Ord. code ● ● ●		
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													
Threaded													
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									
Flanged													
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					

Selection and ordering data (continued)

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).	Article No.	Ord. code
	7ML57- • • • • • - • • • • 0	• • • • •
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) 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

Spare Parts and Accessories	Article No.
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	7ML5725-6ZE12-2A-A0 J2A

- 1) Available with Approval options C and D only, up to 0.5 bar.
- 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 10 mm (0.39 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.

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Selection and ordering data (continued)

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).										Article No. 7ML572- ● ● ● ● ● - ● ● ● ● ● 6-	Ord. code ● ● ●
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											
<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, 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	
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	

Selection and ordering data (continued)

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).	Article No. 7ML572- ● ● ● ● ● - ● ● ● ●	Ord. code ● ● ●
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

Spare Parts	Article No.
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
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 10 mm (0.39 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. 7ML57- ● ● ● ● ● - ● ● ● 0	Ord. code ● ● ●
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	

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Selection and ordering data (continued)

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. 7ML57- ● ● ● ● ● - ● ● ● 0	Ord. code ● ● ●
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		
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		

Selection and ordering data (continued)

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. 7ML57- 27- ● ● ● ● ● - ● ● ● 0										Ord. code ● ● ●		
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)]:	Y14
Measuring-point number/identification (max. 27 characters); specify in plain text	
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

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

Spare Parts	Article No.
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 10 mm (0.39 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.

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).		Article No. 7ML57- 28- ● ● ● ● ● - ● ● ● 0										Ord. code ● ● ●		
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										

SITRANS LPS200

Selection and ordering data (continued)

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).										Article No. 7ML57- ● ● ● ● ● - ● ● ● 0 28-	Ord. code ● ● ●
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								
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.

Selection and ordering data (continued)

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

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.

SITRANS LPS200 Rotary paddle point level switch, rigid extension design Level detection in solids. Top mount, with extension options to 4 m (13.12 ft).	Article No. 7ML57- ● ● ● ● ● - ●									
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SITRANS LPS200

Selection and ordering data (continued)

SITRANS LPS200 Rotary paddle point level switch, rigid extension design Level detection in solids. Top mount, with extension options to 4 m (13.12 ft).							Article No. 7ML57- ● ● ● ● ● - ● ● ● ● 30-	Ord. code ● ● ● ●			
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				
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				
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		P	1	A
501 ... 750 mm (19.72 ... 29.53 inch)							Z		P	1	B
751 ... 1 000 mm (29.57 ... 39.37 inch)							Z		P	1	C
1 001 ... 1 500 mm (39.41 ... 59.05 inch)							Z		P	1	D
1 501 ... 2 000 mm (59.09 ... 78.74 inch)							Z		P	1	E
2 001 ... 2 500 mm (78.78 ... 98.42 inch)							Z		P	1	F
2 501 ... 3 000 mm (98.46 ... 118.11 inch)							Z		P	1	G
3 001 ... 4 000 mm (118.5 ... 157.48 inch)							Z		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

Selection and Ordering data	Order code
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

Selection and ordering data (continued)

Selection and Ordering data	Order code
Food grade materials (in contact with process), according to 1935/2004/EC, with FDA conform shaft sealing ¹⁶⁾¹⁷⁾	K01
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
<u>Optional end of shaft seal for stability and ingress protection</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 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 10 mm (0.39 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.

SITRANS LPS200

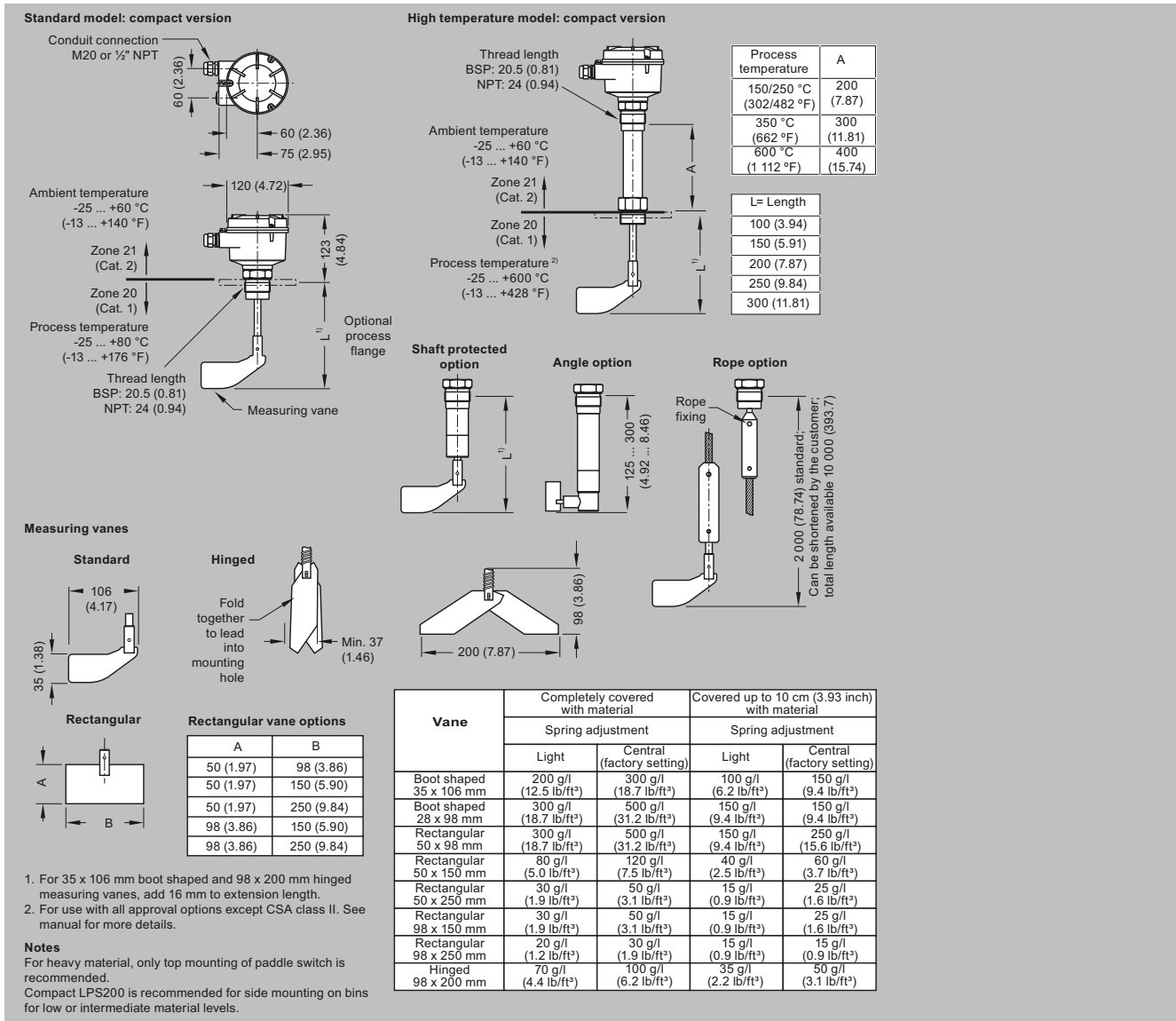
Technical specifications

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/ft³)
- Optional measuring vane	Can detect down to 15.06 g/l (0.94 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 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

Technical specifications (continued)

SITRANS LPS200	
Certificates and approvals	• CSA/FM General Purpose • CE • CSA/FM Dust Ignition Proof • ATEX II 1/2 D • RCM • IECex

Dimensional drawings

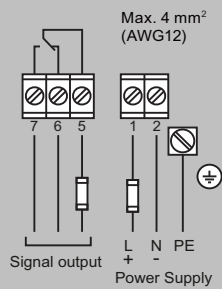


SITRANS LPS200, dimensions in mm (inch)

SITRANS LPS200

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:

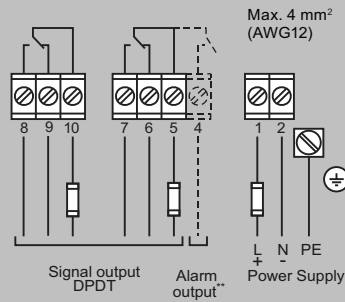
24 V DC $\pm 15\%$ ¹⁾ max. 2.5 W
 External fuse: not required

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)*

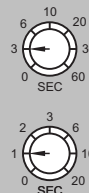


* See manual for universal voltage with SIL.

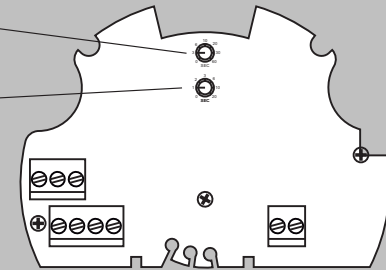
** With option Fail safe alarm (rotation control).
 Contact open when de-energised.
 Fail safe alarm switching and timing behaviour:
 If the vane is not covered, the rotating vane
 shaft will send pulses at 20 second intervals.
 In case of fault, the pulses are missed.
 After 30 seconds, the alarm relay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

Signal output: delay

Sensor covered -> free
 Factory setting = 3 sec



Sensor covered -> covered
 Factory setting = 1 sec



SITRANS LPS200 connections