

## 12.2 SensyTemp TSP121

Temperature Sensor SensyTemp TSP121 with welded thermowell, for light and medium duty applications	Variant digit No.	1 - 7	8	9	10	11	12	13	14	15	Code			
	Catalog No.	TSP121-												
<b>Explosion protection / approval</b> Without Intrinsic Safety: ATEX II 1 G EEx ia IIC T6 ... T1 - Zone 0, 1, 2 Dust ignition proof: ATEX II 1 D IP6X T133 ... T400 - Zone 20, 21, 22 Dust ignition proof and intrinsic safety: ATEX II 1 D IP6X T133 ... T400 and ATEX II 1 G EEx ia IIC T6 ... T1 - Zone 0, 1, 2, 20, 21, 22 ATEX II 3 G EEx nA II T6 ... T1 and ATEX II 3 D IP6X T133 ... T400 - Zone 2 and 22 Others			Y 0											
<b>Material of wetted parts</b> Stainless steel 316 L / 1.4404 Stainless steel 316 Ti / 1.4571 Hastelloy C276 / 2.4819 (Backing flange stainless steel with flange disc Hastelloy C276) Others					S 1									
<b>Thermowell type</b> Tubular thermowell with straight shaft (Form 2 acc. to DIN 43772) Flanged tubular thermowell with straight shaft (Form 2F acc. to DIN 43772) Screwed tubular thermowell with straight shaft (Form 2G acc. to DIN 43772) Tubular thermowell, tapered (Form 3 acc. to DIN 43772) Flanged tubular thermowell, tapered (Form 3F acc. to DIN 43772) Screwed tubular thermowell, tapered (Form 3G acc. to DIN 43772) Tubular thermowell, reduced tip (ABB Form 2S) Flanged tubular thermowell, reduced tip (ABB-Form 2FS) Screwed tubular thermowell, reduced tip (ABB-Form 2GS) Screwed tubular thermowell without extension, straight shaft (ABB-Form 2G0) Screwed tubular thermowell without extension, reduced tip (ABB-Form 2GS0) Others							A 1 A 2 A 3	1) 1) 1)	C 1 C 2 C 3					
							B 1 B 2 B 3	2) 2)	A 4 B 4					
							Z 9							

- 1) Not available with Material of wetted parts code N1  
2) Not available with Material of wetted parts code S1, N1

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Temperature Sensor SensyTemp TSP121 with welded thermowell, for light and medium duty applications	Variant digit No.	1	7	11	12	13	14	15	16	17	18	Code			
	Catalog No.	TSP121-													
<b>Process connection</b>															
Without process connection															
Adjustable compression fitting G 1/2", stainless steel material						3)						Y 0 0			
Adjustable compression fitting 1/2" NPT, stainless steel material						3, 1)						A 0 1			
Parallel thread G 1/2" A						4)						S 0 1			
Parallel thread G 3/4" A						5, 1)						S 0 2			
Parallel thread G 1" A						5, 1)						S 0 3			
Tapered thread 1/2" NPT						4)						S 0 4			
Tapered thread 3/4" NPT						5, 1)						S 0 5			
Tapered thread 1" NPT						5, 1)						S 0 6			
Parallel thread M20 x 1.5						5, 1)						S 0 7			
Parallel thread M27 x 2						5, 1)						S 0 8			
Tapered thread 1/2" BSPT						5, 1)						S 0 9			
Tapered thread 3/4" BSPT						5, 1)						S 1 0			
Tapered thread 1" BSPT						5, 1)						S 1 1			
Flange DN 25 PN10 ... PN40, Form B1 acc. to EN 1092-1						6)						F 0 3			
Flange DN 40 PN10 ... PN40, Form B1 acc. to EN 1092-1						6)						F 0 4			
Flange DN 50 PN10 ... PN40, Form B1 acc. to EN 1092-1						6)						F 0 5			
Flange 1" 150 lbs., Form RF acc. to ANSI/ASME B16.5						6)						F 0 7			
Flange 1" 300 lbs., Form RF acc. to ANSI/ASME B16.5						6)						F 0 8			
Flange 1.5" 150 lbs., Form RF acc. to ANSI/ASME B16.5						6)						F 1 1			
Flange 1.5" 300 lbs., Form RF acc. to ANSI/ASME B16.5						6)						F 1 2			
Flange 1.5" 600 lbs., Form RF acc. to ANSI/ASME B16.5						6)						F 1 3			
Flange 2" 150 lbs., Form RF acc. to ANSI/ASME B16.5						6)						F 1 5			
Flange 2" 300 lbs., Form RF acc. to ANSI/ASME B16.5						6)						F 1 6			
Flange 2" 600 lbs., Form RF acc. to ANSI/ASME B16.5						6)						F 1 7			
Tri-Clamp-flange 1" ... 1.5", ISO 2852 DN15 ... DN25 / DIN 32676 DIN25 ... DIN40 / BS 4825						6)						T 0 1			
Tri-Clamp-flange 2", ISO 2852 DN32 ... DN40 / DIN 32676 DIN50 / BS 4825						6)						T 0 2			
Tri-Clamp-flange 2.5", ISO 2852 DN50 / BS 4825						6)						T 0 3			
Tri-Clamp-flange 3", ISO 2852 DN65 / DIN 32676 DIN65 / BS 4825						6)						T 0 4			
Tri-Clamp-flange 4", DIN 32676 DIN100 / BS 4825						6)						T 0 5			
Others												Z 9 9			
<b>Thermowell diameter</b>															
9 mm												A 1			
11 mm												A 2			
12 mm												A 3			
14 mm												A 4			
13.7 mm												B 2			
Others												Z 9			

- 1) Not available with Material of wetted parts code N1
- 2) Not available with Material of wetted parts code S1, N1
- 3) Not available with Thermowell type code A2, A3, C2, C3, B2, B3, A4, B4
- 4) Not available with Thermowell type code A1, A2, C1, C2, B1, B2
- 5) Not available with Thermowell type code A1, A2, C1, C2, B1, B2, A4, B4
- 6) Not available with Thermowell type code A1, A3, C1, C3, B1, B3, A4, B4
- 7) Not available with Thermowell type code A1, A2, C1, C2, C3, B1, B2, B3, B4
- 8) Not available with Thermowell type code A1, C1, C2, C3, B1
- 9) Not available with Thermowell type code A4, B4
- 10) Not available with Thermowell type code C1, C2, C3, A4, B4
- 11) Not available with Material of wetted parts code S1, S2
- 12) Not available with Thermowell type code A1, C1, C2, C3, B1, A4, B4

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Temperature Sensor SensyTemp TSP121 with welded thermowell, for light and medium duty applications	Variant digit No.	1 - 7	19	20	21	22	23	24	25	26	Code			
	Catalog No.	TSP121-												
<b>Immersion length U</b> Without fixed immersion length U = 100 mm (13) U = 160 mm (13) U = 250 mm (13) U = 400 mm (13) Acc. to customer specification (price per each commencing 100 mm)			Y 0 U 1 U 3 U 5 U 7 Z 9											
<b>Nominal length N</b> N = 230 mm N = 290 mm N = 380 mm N = 530 mm (14, 15) Acc. to customer specification (price per each commencing 100 mm) Acc. to customer specification (price per each commencing 100 mm) (material Hastelloy C276)					N 1 N 3 N 5 N 7 Z 9 Z 9									
<b>Measuring inset type</b> Resistance thermometer, basic application, measuring range -50 ... 400 °C Resistance thermometer, extended vibration resistance, measuring range -50 ... 400 °C Resistance thermometer, extended measuring range -200 ... 600 °C Thermocouple Others						S 1 S 2 D 1 T 1 Z 9								
<b>Sensor type and wiring</b> 1 x Pt100, 2-wire 1 x Pt100, 3-wire 1 x Pt100, 4-wire 2 x Pt100, 2-wire 2 x Pt100, 3-wire 2 x Pt100, 4-wire 1 x Type K (NiCr-Ni) 2 x Type K (NiCr-Ni) 1 x Type J (Fe-CuNi) 2 x Type J (Fe-CuNi) 1 x Type N (NiCrSi-NiSi) 2 x Type N (NiCrSi-NiSi) Others							17) 17) 17) 18) 18) 18) 19) 19) 19) 19) 19) 19) 19)	P 1 P 2 P 3 P 4 P 5 P 6 K 1 K 2 J 1 J 2 N 1 N 2 Z 9						

13) Not available with Thermowell type code A1, C1, B1

14) Not available with Thermowell type code A2, A3, C2, C3, B2, B3, A4, B4  
and Thermowell type code A1, C1, B1, A4, B4

15) Not available with Thermowell type code A2, A3, C2, C3, B2, B3, A4, B4 and Immersion length U code Y0, Z9

17) Not available with Measuring inset type code T1

18) Not available with Measuring inset type code S2, T1

19) Not available with Measuring inset type code S1, S2, D1

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Temperature Sensor SensyTemp TSP121 with welded thermowell, for light and medium duty applications	Variant digit No.	1 - 7	25	26	27	28	29	30	31	32	Code			
	Catalog No.	TSP121-												
<b>Sensor accuracy</b>														
Standard accuracy EN 60751 class B							17)							
Extended accuracy EN 60751 class A from -30 ... 350 °C							20, 21)							
Extended accuracy EN 60751 class A from -200 ... 600 °C							22, 23)							
Standard accuracy EN 60584 class 2							19)							
Extended accuracy EN 60584 class 1							19, 24)							
High accuracy EN 60751 1/3 class B from 0 ... 100 °C							20, 23)							
Others														
<b>Connection head</b>														
BUZ / aluminium, hinged cover														
BUZH / aluminium, high cover, hinged														
BUZHD / aluminium, high cover with display, hinged							25)							
BUKH / polyamid, high cover, hinged							25)							
BEG / stainless steel, screwed cover							25)							
Others														
<b>Transmitter</b>														
Without transmitter, measuring inset with ceramic terminal block							26)							
Without transmitter, measuring inset with flying leads							26)							
TR04, fixed range, output signal 4 ... 20 mA							27, 26, 28)							
TR04-Ex, fixed range, output signal 4 ... 20 mA							29, 26, 28)							
TH01, programmable, output signal 4 ... 20 mA							27, 26)							
TH01-Ex, programmable, output signal 4 ... 20 mA							29, 26)							
TH02, programmable, output signal 4 ... 20 mA, HART							27, 26)							
TH02-Ex, programmable, output signal 4 ... 20 mA, HART							29, 26)							
TTH300, programmable, output signal 4 ... 20 mA, HART							27)							
TTH300 (Ex-version), programmable, output signal 4 ... 20 mA, HART							29)							
TF12, programmable, output PROFIBUS PA							27, 30)							
TF12-Ex, programmable, output PROFIBUS PA							29, 30)							
TF02, programmable, output FOUNDATION Fieldbus							27)							
TF02-Ex, programmable, output FOUNDATION Fieldbus							29)							
Others														

- 17) Not available with Measuring inset type code T1
- 19) Not available with Measuring inset type code S1, S2, D1
- 20) Not available with Measuring inset type code S2, D1, T1
- 21) Not available with Sensor type and wiring code P1, P4, K1, K2, J1, J2, N1, N2
- 22) Not available with Measuring inset type code S1, S2, T1
- 23) Not available with Sensor type and wiring code P1, P4, P5, P6, K1, K2, J1, J2, N1, N2
- 24) Not available with Sensor type and wiring code P1, P2, P3, P4, P5, P6
- 25) Not available with Explosion protection / approval code A3, A4, B1
- 26) Not available with Connection head code B3
- 27) Not available with Explosion protection / approval code A1, A4, B1
- 28) Not available with Sensor type and wiring code P3, P6, K1, K2, J1, J2, N1, N2
- 29) Not available with Explosion protection / approval code Y0, A3, B1
- 30) Not available with Connection head code B1, B3, E1

**Additional ordering information**

Temperature Sensor SensyTemp TSP121		Code			
<b>Name plate</b>					
Stainless steel plate with TAG no.		T1			
<b>Certificates</b>					
Material monitoring with inspection certificate 3.1 acc. to EN 10204 for wetted parts	41)	<b>C2</b>			
Declaration of compliance with the order 2.1 acc. to EN 10204	41)	C4			
Inspection certificate 3.1 acc. to EN 10204 for visual, dimensional and functional test		C6			
Inspection certificate 3.1 acc. to EN 10204 for helium leak test		C7			
Inspection certificate 3.1 acc. to EN 10204 for X-ray test		C8			
Inspection certificate 3.1 acc. to EN 10204 for dye penetration test		C9			
Inspection certificate 3.1 acc. to EN 10204 for pressure test on thermowell		<b>CB</b>			
Inspection certificate 3.1 acc. to EN 10204 for sensor calibration 1 x Pt100	17, 31, 41)	CD			
Inspection certificate 3.1 acc. to EN 10204 for sensor calibration 2 x Pt100	17, 32, 41)	CE			
Inspection certificate 3.1 acc. to EN 10204 for sensor calibration 1 x thermocouple	19, 33, 41)	CF			
Inspection certificate 3.1 acc. to EN 10204 for sensor calibration 2 x thermocouple	19, 34, 41)	CG			
Inspection certificate 3.1 acc. to EN 10204 for DKD sensor calibration 1 x Pt100, separate calibration certificate for each thermometer	17, 31, 41)	CH			
Inspection certificate 3.1 acc. to EN 10204 for DKD sensor calibration 2 x Pt100, separate calibration certificate for each thermometer	17, 32, 41)	CJ			
Inspection certificate 3.1 acc. to EN 10204 for DKD sensor calibration 1 x thermocouple, separate calibration certificate for each thermometer	19, 33, 41)	CK			
Inspection certificate 3.1 acc. to EN 10204 for DKD sensor calibration 2 x thermocouple, separate calibration certificate for each thermometer	19, 34, 41)	CL			
Others		CZ			
<b>Temperatures for sensor calibration</b>		<b>1 x Pt100 / 1 x TC</b>			
0 °C / 32 °F	35)	V1			
100 °C / 212 °F	35)	V2			
0 °C and 100 °C / 32 °F and 212 °F	35)	V4			
As specified by customer	(price per calibration point)	35)	V6		
<b>Temperatures for sensor calibration</b>		<b>2 x Pt100 / 2 x TC</b>			
0 °C / 32 °F	35)	V1			
100 °C / 212 °F	35)	V2			
0 °C and 100 °C / 32 °F and 212 °F	35)	V4			
As specified by customer	(price per calibration point)	35)	V6		
<b>Temperatures for DKD calibration</b>		<b>1 x Pt100 / 1 x TC</b>			
0 °C / 32 °F	36)	D1			
100 °C / 212 °F	36)	D2			
0 °C and 100 °C / 32 °F and 212 °F	36)	D4			
As specified by customer	(price per calibration point)	36)	D6		
<b>Temperatures for DKD calibration</b>		<b>2 x Pt100 / 2 x TC</b>			
0 °C / 32 °F	36)	D1			
100 °C / 212 °F	36)	D2			
0 °C and 100 °C / 32 °F and 212 °F	36)	D4			
As specified by customer	(price per calibration point)	36)	D6		

17) Not available with Measuring inset type code T1

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19) Not available with Measuring inset type code S1, S2, D1

31) Not available with Sensor type and wiring code P4, P5, P6, K1, K2, J1, J2, N1, N2

32) Not available with Sensor type and wiring code P1, P2, P3, K1, K2, J1, J2, N1, N2

33) Not available with Sensor type and wiring code P1, P2, P3, P4, P5, P6, K2, J2, N2

34) Not available with Sensor type and wiring code P1, P2, P3, P4, P5, P6, K1, J1, N1

35) Not available with Certificates code C2, C4, C6, C7, C8, C9, CB, CH, CJ, CK, CL

36) Not available with Certificates code C2, C4, C6, C7, C8, C9, CB, CD, CE, CF, CG

41) Price per order line

**Additional ordering information**

Temperature Sensor SensyTemp TSP121		Code			
<b>Thermowell options</b>					
Thermowell stainless steel with additional tantalum sleeve		S1			
Thermowell coated with 0.5 mm E-CTFE / Halar, wetted parts incl. flange surface	1, 6)	S2			
Thermowell clean for oxygen service	1)	S9			
Others		SZ			
<b>Flange connection options</b>					
Flange facing with groove form C acc. to EN 1092-1	1, 37)	F1			
Flange facing with tongue form D acc. to EN 1092-1	1, 37)	F2			
Flange facing with RTJ surface acc. to ANSI/ASME B16.5	1, 38)	F3			
Others		FZ			
<b>Cable entry options</b>					
1 x 1/2" NPT, without cable gland	39)	U2			
Others		UZ			
<b>Transmitter measuring range</b>					
-30 ... 60 °C	40)	A1			
-20 ... 40 °C	40)	A2			
0 ... 40 °C	40)	A3			
0 ... 60 °C	40)	A4			
0 ... 100 °C	40)	A5			
0 ... 120 °C	40)	A6			
0 ... 150 °C	40)	A7			
0 ... 200 °C	40)	A8			
0 ... 250 °C	40)	AF			
0 ... 300 °C	40)	AG			
0 ... 400 °C	40)	AH			
0 ... 600 °C	40)	AJ			
0 ... 800 °C	40)	AK			
0 ... 1000 °C	40, 19)	AL			
0 ... 1200 °C	40, 19)	AM			
0 ... 1400 °C	40, 19)	AN			
0 ... 1600 °C	40, 19)	AP			
Others	40)	AZ			

1) Not available with Material of wetted parts code N1

6) Not available with Thermowell type code A1, A3, C1, C3, B1, B3, A4, B4

19) Not available with Measuring inset type code S1, S2, D1

37) Not available with Process connection code Y00, A01, A02, S01, S02, S03, S04, S05, S06, S07, S08, S09, S10, S11, F07, F08, F11, F12, F13, F15, F16, F17, T01, T02, T03, T04, T05

38) Not available with Process connection code Y00, A01, A02, S01, S02, S03, S04, S05, S06, S07, S08, S09, S10, S11, F03, F04, F05, F07, F11, F15, T01, T02, T03, T04, T05

39) Not available with Connection head code K1, E1

40) Not available with Transmitter code Y1, Y2