

# PBT-RP160SN1SS0A5A0Z PBT



**PRESSURE SENSORS** 

## PBT-RP160SN1SS0A5A0Z | PBT

PRESSURE SENSORS



#### Ordering information

Туре	Part no.
PBT-RP160SN1SS0A5A0Z	6045070

Other models and accessories -> www.sick.com/PBT

Illustration may differ

#### Detailed technical data

MediumLiquid, gaseousPressure typeGauge pressureMeasuring range0 psi 160 psiProcess temperature0 °C +80 °COutput signal4 mA 20 mAPerformanceNon-linearity≤ ± 0.5 %, (Best Fit Straight Line, BFSL) according to IEC 61298-2Accuracy≤ ± 1 % of the span (with non-linearity 0.25 %) s ± 0.6 % of Span (with non-linearity 0.25 %) s ± 0.6 % of Span (with non-linearity 0.25 %) s ± 0.6 % of Span (with non-linearity 0.5 %) including non-linearity, Nysteresis, zero point and full scale error (corresponds to error of measurement as per IEC 61298-2)Adjustment accuracy of zero signal< 0.5 % of span typ., < 0.8 % of span max. (with non-linearity 0.5 %) including non-linearity, Nysteresis, zero point and full scale error (corresponds to error of measurement as per IEC 61298-2)Adjustment accuracy of zero signal< 0.5 % of span typ., < 0.8 % of span max. (with non-linearity 0.5 %) including non-linearity, Nysteresis, zero point and full scale error (corresponds to error of measurement as per IEC 61298-2)Adjustment accuracy of zero signal< 0.5 % of span typ., < 0.8 % of span max. (with non-linearity 0.5 %) including non-linearity, Nysteresis, zero point and full scale error (corresponds to error of measurement accuracy of zero signalNon-repeatability< 0.1 % of the span	Features	
Measuring range   O psi 160 psi     Process temperature   0 °C +80 °C     Output signal   4 mA 20 mA     Performance   *     Non-linearity   \$ ± 0.5 %, (Best Fit Straight Line, BFSL) according to IEC 61298-2     Accuracy   \$ ± 1.% of the span (with non-linearity 0.25 %)     \$ ± 0.6 % of Span (with non-linearity 0.25 %)   \$ ± 0.6 % of Span (with non-linearity 0.5 %)     Accuracy   \$ ± 1.% of the span (with non-linearity 0.5 %)     Adjustment accuracy of zero signal   \$ 0.5 % of span typ., \$ 0.8 % of span max. (with non-linearity 0.5 %)     Hysteresis   \$ 0.16 % of the span     Non-repeatability   \$ 0.16 % of the span     Response time   \$ 0.16 % of the span     Response time   \$ 0.3 % of the span     Long-term drift/one-year stability   \$ 0.1 % of span to IEC 61298-2     Rate temperature range   0 °C +80 °C     Service life   Minimum 100 Mio. life cycles     Mechanics/electronics   Pressure connection: stainless steel 3161.     Pressure sensor: stainless steel 3161.   Pressure sensor: stainless steel 3161.     Pressure sensor: stainless steel 3161. (for measurement ranges from 0 bar 10 bar rel stainless steel 3161. (for measurement ranges fro	Medium	Liquid, gaseous
Process temperature   0 * C +80 * C     Output signal   4 mA 20 mA     Performance      Non-linearity   ≤ ± 0.5 %, (Best Fit Straight Line, BFSL) according to IEC 61298-2     Accuracy   ≤ ± 1 % of the span (with non-linearity 0.25 %)	Pressure type	Gauge pressure
Output signal 4 mA 20 mA   Performance   Non-linearity \$ ± 0.5 %, (Best Fit Straight Line, BFSL) according to IEC 61298-2   Accuracy \$ ± 1 % of the span (with non-linearity 0.25 %)   \$ ≤ 0.6 % of Span (with non-linearity 0.25 %) \$ ± 0.6 % of Span (with non-linearity 0.25 %)   Adjustment accuracy of zero signal \$ 0.5 % of span (with non-linearity 0.5 %)   Hysteresis \$ 0.16 % of the span   Non-repeatability \$ 0.16 % of the span   Response time \$ 0.1 % of the span   Signal noise \$ 0.3 % of the span   Long-term drift/one-year stability \$ 0.1 % of span to IEC 61298-2   Rated temperature range 0 °C +80 °C   Service life Minimum 100 Mio. life cycles   Mechanics/electronics Pressure connection: stainless steel 316L   Pressure connection: stainless steel 316L for measurement ranges from 0 bar 10 bar rel stain-less steel 13-8 PH)   Internal transmission fluid Silicone oil (only with pressure ranges < 0 bar 10 bar and ≤ 0 bar abs 25 bar abs)   Pressure port Standard	Measuring range	0 psi 160 psi
Performance   Non-linearity \$ ± 0.5 %, (Best Fit Straight Line, BFSL) according to IEC 61298-2   Accuracy \$ ± 0.6 % of Span (with non-linearity 0.25 %)   \$ ± 0.6 % of Span (with non-linearity 0.25 % and with signal output 0 5 V)   \$ ± 1,0 % of Span (with non-linearity 0.25 %)   accuracy \$ ± 0.6 % of Span (with non-linearity 0.25 %)   Adjustment accuracy of zero signal \$ 0.5 % of span typ., \$ 0.8 % of span max. (with non-linearity 0.5 %)   Hysteresis \$ 0.16 % of the span   Non-repeatability \$ 0.16 % of the span   Response time \$ 4 ms   Signal noise \$ 0.3 % of the span   Long-term drift/one-year stability \$ 0.1 % of span to IEC 61298-2   Rated temperature range 0 ° C +80 ° C   Service life Minimum 100 Mio. life cycles   Mechanics/electronics Ym NPT   Wetted parts Pressure connection: stainless steel 316L Pressure sensor: stainless steel 316L Pressure sensor: stainless steel 318L for measurement ranges from 0 bar 10 bar rel stainless steel 13-8 PH)   Internal transmission fluid Silicone oil (only with pressure ranges < 0 bar 10 bar and < 0 bar abs 25 bar abs)   Pressure port Standard	Process temperature	0 °C +80 °C
Non-linearity \$ ± 0.5 %, (Best Fit Straight Line, BFSL) according to IEC 61298-2   Accuracy \$ ± 1 % of the span (with non-linearity 0.25 %) action (0.5 %) (s ± 0.6 % of Span (with non-linearity 0.5 %))   Adjustment accuracy of zero signal \$ 0.5 % of span (with non-linearity 0.5 %)   Hysteresis \$ 0.16 % of the span   Non-repeatability \$ 0.16 % of the span   Non-repeatability \$ 0.1 % of the span   Kated temperature range \$ 0.1 % of the span   Signal noise \$ 0.3 % of the span   Long-term drift/one-year stability \$ 0.1 % of span to IEC 61298-2   Rated temperature range \$ 0.1 % of span to IEC 61298-2   Rated temperature range \$ 0.1 % of span to IEC 61298-2   Mechanics/electronics Minimum 100 Mio. Iife cycles   Process connection ¼" NPT   Wetted parts Pressure connection: stainless steel 316L (for measurement ranges from 0 bar 10 bar rel stainless steel 318-2 (for measurement ranges from 0 bar 10 bar rel stainless steel 318-2 (for measurement ranges from 0 bar 10 bar rel stainless steel 318-2 (for measurement ranges from 0 bar 25 bar abs)   Pressure port Standard	Output signal	4 mA 20 mA
Accuracy\$ ± 1 % of the span (with non-linearity 0.25 %) \$ ± 0,6 % of Span (with non-linearity 0.25 %) and with signal output 0 5 V) \$ ± 1.0 % of Span (with non-linearity 0.5 %) Including non-linearity, 0.5 %) Including non-linearity, 0.5 %)Adjustment accuracy of zero signal\$ 0.5 % of span typ., \$ 0.8 % of span max. (with non-linearity 0.5 %)Hysteresis\$ 0.16 % of the spanNon-repeatability\$ 0.1% of the spanResponse time\$ 4 msSignal noise\$ 0.3 % of the spanLong-term drift/one-year stability\$ 0.1 % of span to IEC 61298-2Reted temperature range0 ° C +80 ° CService lifeMinimum 100 Mio. life cyclesMechanics/electronicsPressure connection: stainless steel 316L Pressure sensor: stainless steel 316L (for measurement ranges from 0 bar 10 bar nel stain- less steel 13.8 PH)Internal transmission fluidSilicone oil (only with pressure ranges < 0 bar 10 bar and < 0 bar abs 25 bar abs)Pressure portStandard	Performance	
≤ ± 0.6 % of Span (with non-linearity 0.25 % and with signal output 0 5 V)   ≤ ± 0.6 % of Span (with non-linearity 0.5 %)   Including non-linearity, hysteresis, zero point and full scale error (corresponds to error of measurement as per IEC 61298-2)   Adjustment accuracy of zero signal ≤ 0.5 % of span typ., ≤ 0.8 % of span max. (with non-linearity 0.5 %)   Hysteresis ≤ 0.16 % of the span   Non-repeatability ≤ 0.1.6 % of the span   Response time < 4 ms   Signal noise ≤ 0.1.8 of the span   Long-term drift/one-year stability ≤ 0.1.4 of span to IEC 61298-2   Rated temperature range 0 ° C +80 ° C   Minimum 100 Mio. life cycles Minimum 100 Mio. life cycles   Mechanics/electronics ¼" NPT   Pressure connection ¼" NPT   Wetted parts Pressure connection: stainless steel 316L (for measurement ranges from 0 bar 10 bar rel stainless steel 316L (for measurement ranges from 0 bar 10 bar rel stainless steel 31.8 PH)   Internal transmission fluid Silicone oil (only with pressure ranges < 0 bar 10 bar and ≤ 0 bar abs 25 bar abs)   Pressure port Standard	Non-linearity	$\leq$ $\pm$ 0.5 %, (Best Fit Straight Line, BFSL) according to IEC 61298-2
Hysteresis≤ 0.16 % of the spanNon-repeatability≤ 0.1 % of the spanResponse time< 4 msSignal noise≤ 0.3 % of the spanLong-term drift/one-year stability≤ 0.1 % of span to IEC 61298-2Rated temperature range0 °C +80 °CService lifeMinimum 100 Mio. life cyclesMechanics/electronicsYProcess connection¼" NPTWetted partsPressure Connection: stainless steel 316L Pressure sensor: stainless steel 316L (for measurement ranges from 0 bar 10 bar rel stain- less steel 13-8 PH)Internal transmission fluidSilicone oil (only with pressure ranges < 0 bar 10 bar and ≤ 0 bar abs 25 bar abs)Pressure portStandard	Accuracy	$\leq \pm 0,6 \%$ of Span (with non-linearity 0.25 % and with signal output 0 5 V) $\leq \pm 1,0 \%$ of Span (with non-linearity 0.5 %) Including non-linearity, hysteresis, zero point and full scale error (corresponds to error of mea-
Non-repeatability< 0.1 % of the span	Adjustment accuracy of zero signal	$\leq$ 0.5 % of span typ., $\leq$ 0.8 % of span max. (with non-linerarity 0.5 %)
Response time< 4 ms	Hysteresis	$\leq$ 0.16 % of the span
Signal noise< 0.3 % of the span	Non-repeatability	$\leq$ 0.1 % of the span
CCLong-term drift/one-year stability≤ 0.1% of span to IEC 61298-2Rated temperature range0 °C +80 °CService lifeMinimum 100 Mio. life cyclesMechanics/electronicsVProcess connection¼" NPTWetted partsPressure Connection: stainless steel 316L Pressure sensor: stainless steel 316L Pressure sensor: stainless steel 316L (for measurement ranges from 0 bar 10 bar rel stain- less steel 13-8 PH)Internal transmission fluidSilicone oil (only with pressure ranges < 0 bar 10 bar and ≤ 0 bar abs 25 bar abs)Pressure portStandard	Response time	< 4 ms
Rated temperature range0 °C +80 °CService lifeMinimum 100 Mio. life cyclesMechanics/electronicsMinimum 100 Mio. life cyclesProcess connection¼" NPTWetted partsPressure Connection: stainless steel 316L Pressure sensor: stainless steel 316L (for measurement ranges from 0 bar 10 bar rel stainless steel 13-8 PH)Internal transmission fluidSilicone oil (only with pressure ranges < 0 bar 10 bar and ≤ 0 bar abs 25 bar abs)	Signal noise	$\leq$ 0.3 % of the span
Service life Minimum 100 Mio. life cycles   Mechanics/electronics Mechanics/electronics   Process connection ¼" NPT   Wetted parts Pressure Connection: stainless steel 316L Pressure sensor: stainless steel 316L (for measurement ranges from 0 bar 10 bar rel stainless steel 13-8 PH)   Internal transmission fluid Silicone oil (only with pressure ranges < 0 bar 10 bar and ≤ 0 bar abs 25 bar abs)	Long-term drift/one-year stability	≤ 0.1 % of span to IEC 61298-2
Mechanics/electronics   Process connection ¼" NPT   Wetted parts Pressure Connection: stainless steel 316L Pressure sensor: stainless steel 316L (for measurement ranges from 0 bar 10 bar rel stain- less steel 13-8 PH)   Internal transmission fluid Silicone oil (only with pressure ranges < 0 bar 10 bar and ≤ 0 bar abs 25 bar abs)   Standard Standard	Rated temperature range	0 °C +80 °C
Process connection ¼" NPT   Wetted parts Pressure Connection: stainless steel 316L Pressure sensor: stainless steel 316L (for measurement ranges from 0 bar 10 bar rel stainless steel 13-8 PH)   Internal transmission fluid Silicone oil (only with pressure ranges < 0 bar 10 bar and ≤ 0 bar abs 25 bar abs)   Pressure port Standard	Service life	Minimum 100 Mio. life cycles
Wetted parts Pressure Connection: stainless steel 316L   Pressure sensor: stainless steel 316L (for measurement ranges from 0 bar 10 bar rel stainless steel 13-8 PH)   Internal transmission fluid Silicone oil (only with pressure ranges < 0 bar 10 bar and ≤ 0 bar abs 25 bar abs)   Pressure port Standard	Mechanics/electronics	
Pressure sensor: stainless steel 316L (for measurement ranges from 0 bar 10 bar rel stainless steel 13-8 PH)   Internal transmission fluid Silicone oil (only with pressure ranges < 0 bar 10 bar and ≤ 0 bar abs 25 bar abs)   Pressure port Standard	Process connection	1⁄4" NPT
Pressure port Standard	Wetted parts	Pressure sensor: stainless steel 316L (for measurement ranges from 0 bar 10 bar rel stain-
	Internal transmission fluid	Silicone oil (only with pressure ranges < 0 bar 10 bar and $\leq$ 0 bar abs 25 bar abs)
Housing material Stainless steel 316L	Pressure port	Standard
	Housing material	Stainless steel 316L

<sup>1)</sup> The pressure transmitter must be supplied with power by a limited energy circuit compliant with 9.3 of UL/EN/IEC 601010-1 or LPS to UL/EN/IEC 60950-1 or Class 2 to UL 1310/UL1585 (NEC or CEC). The power supply must be suitable for operation above 2,000 m if the pressure transmitter is used above this altitude.

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Electrical connection	Flying leads, 5 m, IP67
Supply voltage	
Power consumption	
Electrical safety	
Insolation voltage	500 V DC
CE-conformity	Pressure equipment directive: 97/23/EC, EMC directive: 2004/108/EC, EN 61 326-2-3
Weight sensor	Approx. 80 g
Seal	Without seal
Enclosure rating	IP 67
Protection class III	✓
Reference conditions	Reference conditions: According to IEC 61298-1

<sup>1)</sup> The pressure transmitter must be supplied with power by a limited energy circuit compliant with 9.3 of UL/EN/IEC 601010-1 or LPS to UL/EN/IEC 60950-1 or Class 2 to UL 1310/UL1585 (NEC or CEC). The power supply must be suitable for operation above 2,000 m if the pressure transmitter is used above this altitude.

#### Ambient data

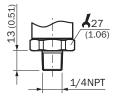
Ambient temperature	0 °C +80 °C
Storage temperature	-20 °C +80 °C
Relative humidity	45 % 75 %
Shock load	
Vibration load	

#### Classifications

ECI@ss 5.0	27200614
ECI@ss 5.1.4	27200614
ECI@ss 6.0	27200614
ECI@ss 6.2	27200614
ECI@ss 7.0	27200614
ECI@ss 8.0	27200614
ECI@ss 8.1	27200614
ECI@ss 9.0	27200614
ETIM 5.0	EC002476
ETIM 6.0	EC002476
UNSPSC 16.0901	41112410

#### Dimensional drawing (Dimensions in mm (inch))

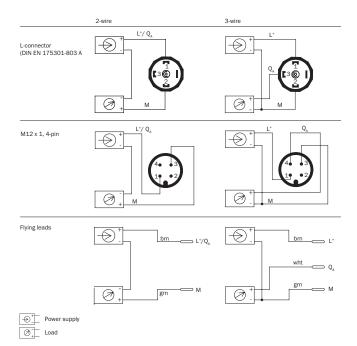
1⁄4" NPT



## PBT-RP160SN1SS0A5A0Z | PBT

PRESSURE SENSORS

#### Connection type



#### **Recommended accessories**

Other models and accessories -> www.sick.com/PBT

	Brief description	Туре	Part no.
Mounting brackets and mounting plates			
Fa	Mounting bracket for simple and stable wall mounting of pressure sensors with 27 mm hexagon, Aluminum	BEF-FL-ALUPBS-HLDR	5322501
Plug connecto	rs and cables		
-	Head A: female connector, M12, 4-pin, straight Head B: cable Cable: PVC, unshielded, 2 m	DOL-1204-G02M	6009382
	Head A: female connector, M12, 4-pin, straight Head B: cable Cable: drag chain use, PUR, halogen-free, unshielded, 2 m	DOL-1204-G02MC	6025900
-	Head A: female connector, M12, 4-pin, straight Head B: cable Cable: PVC, unshielded, 5 m	DOL-1204-G05M	6009866
	Head A: female connector, M12, 4-pin, straight Head B: cable Cable: PVC, unshielded, 10 m	DOL-1204-G10M	6010543
	Head A: female connector, M12, 4-pin, straight Head B: cable Cable: drag chain use, PUR, halogen-free, unshielded, 10 m	DOL-1204-G10MC	6025902

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	Brief description	Туре	Part no.
	Head A: female connector, M12, 4-pin, straight Head B: cable Cable: PVC, unshielded, 15 m	DOL-1204-G15M	6010753
-	Head A: female connector, M12, 4-pin, straight Head B: cable Cable: PVC, unshielded, 20 m	DOL-1204-G20M	6034401
	Head A: female connector, M12, 4-pin, angled Head B: cable Cable: PVC, unshielded, 2 m	DOL-1204-W02M	6009383
>	Head A: female connector, M12, 4-pin, angled Head B: cable Cable: drag chain use, PUR, halogen-free, unshielded, 2 m	DOL-1204-W02MC	6025903
	Head A: female connector, M12, 4-pin, angled Head B: cable Cable: PVC, unshielded, 5 m	DOL-1204-W05M	6009867
~	Head A: female connector, M12, 4-pin, angled Head B: cable Cable: drag chain use, PUR, halogen-free, unshielded, 5 m	DOL-1204-W05MC	6025904
	Head A: female connector, M12, 4-pin, angled Head B: cable Cable: drag chain use, Welding spark resistant, PUR, halogen-free, unshielded, 5 m	DOL-1204-W05MD	6020399
	Head A: female connector, M12, 4-pin, angled Head B: cable Cable: PVC, unshielded, 10 m	DOL-1204-W10M	6010541
>	Head A: female connector, M12, 4-pin, angled Head B: cable Cable: drag chain use, PUR, halogen-free, unshielded, 10 m	DOL-1204-W10MC	6025905
	Head A: female connector, M12, 4-pin, angled Head B: cable Cable: PVC, unshielded, 15 m	DOL-1204-W15M	6036474
	Head A: female connector, M12, 4-pin, angled Head B: cable Cable: PVC, unshielded, 20 m	DOL-1204-W20M	6033559

# SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is "Sensor Intelligence."

## WORLDWIDE PRESENCE:

Contacts and other locations -www.sick.com



Online data sheet

