Temperature Sensor
Model 4271B

Typical applications

- Bearing temperature
- Fluid temperature
- Power or compressor cylinder overload
- Packaging gland temperature detection
- Compressor discharge temperature (when used with thermowell)

Model 4271B

Key features and benefits

- Continuous monitoring
- Spring loaded
- Environmentally sealed
- Replaces model 4103D
- Corrosion resistant
- RTD or thermocouple configuration
- Can be installed where hazardous fluids and high pressures are present

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Contents

Temperature Sensor - Model 4271B

Overview

AMOT Model 4271B Temperature Sensor provides a low cost, reliable sensor which will allow continuous temperature monitoring of critical machine parts.

The environmentally sealed design provides constant protection against oil and other contaminates from entering the sensing tip area when correctly installed.

Operation

Model 4271B contains an internal spring assembly which provides constant tension on the sensing tip.

The internal spring assembly, used in conjunction with the lower spring and seat attachment, provide positive contact to the monitored surface.

Installation

Installation of AMOT Model 4271B can be performed by following the required procedure:

1) Remove bearing cap from crankshaft.

2) Remove bearing from cap.

3) Locate a point on the bearing cap which complies with the available installed depth dimensions offered on the 4271B. This location should be perpendicular and centered with the bearing surface.

4) With the proper equipment, drill a $^{29}/_{64}$" hole through the bearing cap, using information from step 3.

5) Using a tap (½ - 20 NF), thread the outer portion of the newly drilled hole on the bearing cap to the required depth.

6) After procedures 4 and 5 have been completed, reinstall the bearing and cap to their proper location on the machine.

7) Install a correctly selected 4271B temperature sensor into the pre drilled hole (see step 4) and tighten body down until sensing probe moves approximately ⅛" - ¼" from rest position.

8) Tighten locknut to hold body into position.

9) Place sensor wire along a specified path, so as not to interfere with machine operation, and secure it into position.
Note: all connections should terminate into correctly specified equipment or junction box to meet the required system codes.

10) Connect to temperature monitoring device.

AMOT Model 4271B Temperature Sensors can be used as the basic sensing units in a safety system. The use of barriers or approved IS power source(s) is recommended if the monitoring system is not rated for Div. 1 or Div. 2 use.

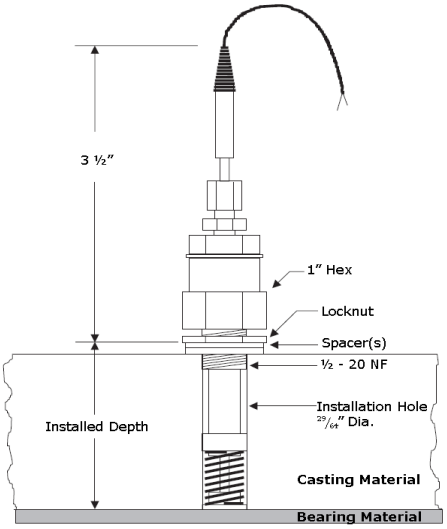
AMOT is ready to aid the user in applications of Model 4271B Temperature Sensors to the extent of its knowledge and experience. Decisions such as actual location of the installation, insertion length, details of machining, and connection to a safety related system should only be made by the user after he or she has physically checked the equipment under consideration.

Alternative Installations

Spacers

To provide a customer with installation flexibility, the use of spacers (**P/N: 6661**) create variable installation depths which range from 0 to ½" depending upon application, see Figure A.

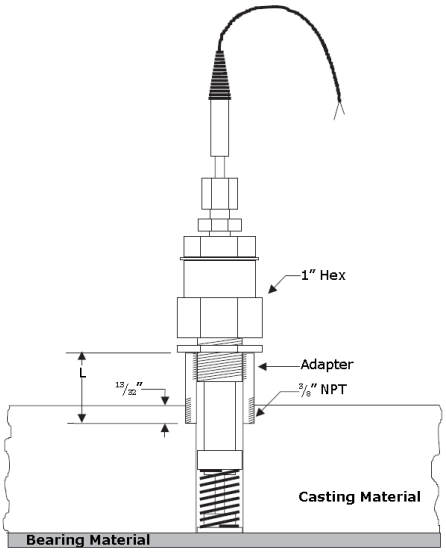
	Installed depth (MAX)	
	mm	Inches
No nut or spacers	39.7	1 9/16"
Nut only	36.5	1 7/16"
Nut plus 1 spacer	33.3	1 5/16"
Nut plus 2 spacers	30.2	1 3/16"
Nut plus 3 spacers	27.0	1 1/16"



Adapters

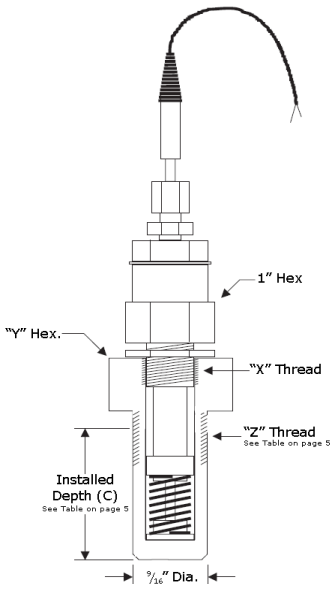
To adapt the Model 4271B for applications which involve shallow or thin mounting surfaces, the use of a specific size adapter can provide an alternative in these situations. To select the appropriate size adapter use the following chart:

Adapter	Length (L)	
	mm	Inches
6660L001	111	4 3/8"
6660L002	63.5	2 ½"
6660L003	31.8	1 ¼"
6660L004	152.4	6"
6660L005	127	5"
6660L006	73	2 7/8"
6660L007	117.5	4 5/8"
6660L008	38.1	1 ½"



Thermowells

The Model 4271B can be with an optional thermowell. The use of thermowells allow for Model 4271B to be installed where hazardous fluids and high pressures are present. Thermowells also allow removal of the sensing probe, without interfering with the sensed fluid. To order a thermowell use the table on page 5.



Alternative Installations Continued

Thermowells continued

Example	6721L	1	15	Code description			Comments
				Basic model (A)			
Basic model (A)	6721L			Stainless steel, 3,500 psi			
	9859L			416 Stainless steel, 8,000 psi			
				Thread (B)			
				"X"	**"Y"**	**"Z"**	
Thread (B)		0		½-20 UNF	1"	½ NPT	6721L
				½-20 UNF	1 5/16"	¾-14 NPT	9859L
		1		½-20 UNF	1"	½ BSP	6721L ONLY
				Installed depth (C)			
				6721L		**9859L**	
				mm	**Inches**	**mm**	**Inches**
Installed depth (C)			04	42.9	1 11/16"	41.3	1 5/8"
			05	55.6	2 3/16"	54.0	2 1/8"
			06	68.3	2 11/16"	66.7	2 5/8"
			07	81.0	3 3/16"	79.4	3 1/8"
			08	93.7	3 11/16"	92.1	3 5/8"
			09	106.4	4 3/16"	104.8	4 1/8"
			10	119.1	4 11/16"	117.5	4 5/8"
			11	131.8	5 3/16"	130.2	5 1/8"
			12	144.5	5 11/16"	142.9	5 5/8"
			13	157.2	6 3/16"	-	-
			14	169.9	6 11/16"	-	-
			15	182.6	7 3/16"	-	-
			16	195.3	7 11/16"	-	-
			17	208.0	8 3/16"	206.4	8 1/8"
			18	220.7	8 11/16"	-	-
			19	233.4	9 3/16"	-	-
			20	246.1	9 11/16"	-	-

How to Order

Use the table below to select the unique specification of your Model 4271B Temperature Sensor.

Example	4271B	A	B	1	C	07	A	**Code description**	
								Basic model (A)	
Basic model (A)	4271B							Model code and revision level	
								Mounting thread (B)	
Mounting thread (B)		A						½-20 UNF	
								Sensor (C)	
Sensor (C)			A					2-wire RTD	
			B					3-wire RTD	
			J					Thermocouple, Type J	
			K					Thermocouple, Type K	
								Conduit conductor (D)	
Conduit conductor (D)				1				None	
								Lead wire protection (E)	
Lead wire protection (E)					A			Fiberglass coated	
					B			Teflon coated	
					C			Fiberglass with S.S. overbraid	
					D			Teflon with S.S. overbraid	
					E			Fiberglass with S.S. flex armor	
					F			Teflon with S.S. flex armor	
								Installed depth (F)	
								mm	**Inches**
Installed depth (F)						03		27 to 40	1 1/16″ to 1 9/16″
						04		48 to 57	1 7/8″ to 2 1/4″
						05		57 to 70	2 1/4″ to 2 3/4″
						06		73 to 83	2 7/8″ to 3 1/4″
						07		86 to 95	3 3/8″ to 3 3/4″
						08		98 to 108	3 7/8″ to 4 1/4″
						09		111 to 121	4 3/8″ to 4 3/4″
						10		124 to 133	4 7/8″ to 5 1/4″
						11		137 to 146	5 3/8″ to 5 3/4″
						12		149 to 159	5 7/8″ to 6 1/4″
						13		162 to 171	6 3/8″ to 6 3/4″
						14		175 to 185	6 7/8″ to 7 1/4″
						15		187 to 197	7 3/8″ to 7 3/4″
						16		200 to 210	7 7/8″ to 8 1/4″
						17		213 to 222	8 3/8″ to 8 3/4″
						18		225 to 235	8 7/8″ to 9 1/4″
						19		238 to 248	9 3/8″ to 9 3/4″
						20		251 to 260	9 7/8″ to 10 1/4″
								Wire length (G)	
Wire length (G)							A	4.5 meters	15 feet
							B	7.6 meters	25 feet

Specification

		Metric units	English units
Body material	315 Stainless steel and brass		
Seal material	Viton		
Sensing probe material	316 Stainless steel		
Wire types	Fiberglass	1.59 mm Diameter	1/16" Diameter
	Teflon	1.59 mm Diameter	1/16" Diameter
	Fiberglass w/ 316 S.S. overbraid	3.18 mm Diameter	1/8" Diameter
	Teflon w/ 316 S.S. overbraid	3.18 mm Diameter	1/8" Diameter
	Fiberglass w/ 316 S.S. flex armor	6.35 mm Diameter	1/4" Diameter
	Teflon w/ 316 S.S. flex armor	6.35 mm Diameter	1/4" Diameter
Temperature sensing range		-101°C - 537°C	-150°F - 1000°F
Net weight		0.5 kg	1.0 lb

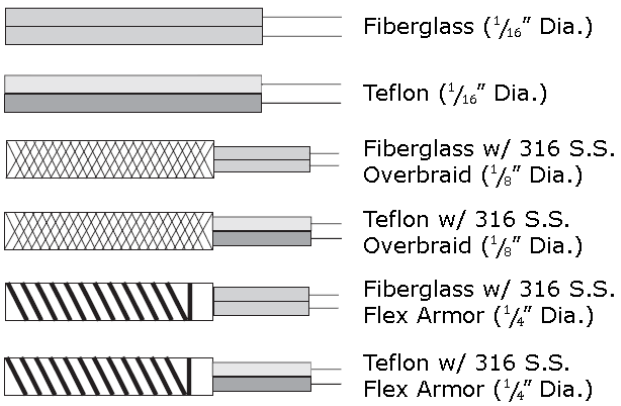
Maintenance and Service Parts

Over time, exposure to foreign chemicals and particulate matter as well as prolonged operation at extreme conditions may reduce the effectiveness of the sensor. At such time, AMOT Temperature Sensors can be restored to original performance by replacing the service parts. Service parts for AMOT Temperature Sensors include a new sensor and seal required for normal maintenance. Please order service parts using the part numbers, quantities and descriptions given in the service parts table below.

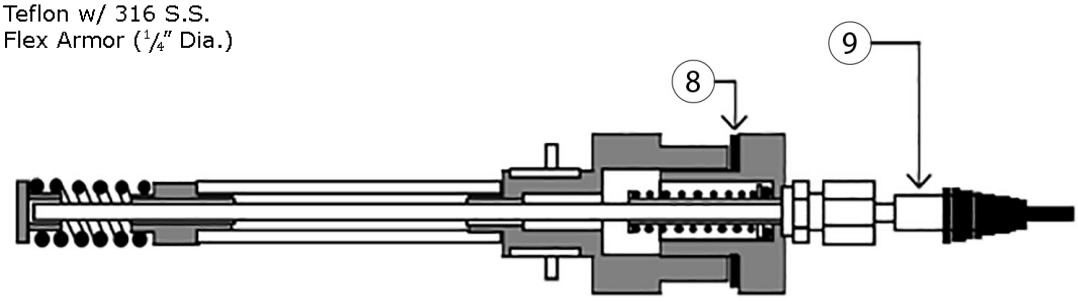
AMOT recommends regular maintenance, including visual inspection at the major overhaul of the engine or yearly if lacquering of the lube oil is observed. Excessive lacquering can cause poor heat transfer, which can produce inaccurate temperature reading and slower response to changing temperatures.

AMOT designs and tests all its products to ensure that high quality standards are met. For good product life, carefully follow AMOT's installation and maintenance instructions; failure to do so could result in damage to the equipment being protected or controlled.

LEAD WIRE TYPE



Service parts			
Ref no.	**Part no.**	**Qty.**	**AMOT part description**
8	11283L008	1	Seal #600-3130-½
9	*Refer to table on page 8*	1	Sensor
-	ISB-4271-001	1	4271B Installation and Service Bulletin



Maintenance and Service Parts Continued

Replacement sensor(s) model number structure

Use the table below to select the replacement sensor for your Model 4271B Temperature Sensor.

Example	4265X1	A	4	A	**Code description**	
					Basic model (A)	
Basic model (A)	4265X1				Sensor (C) = J	
	4266X1				Sensor (C) = K	
	4267X1				Sensor (C) = A, B	
					Lead wire protection (B)	
Lead wire protection (B)[1]		A			Fiberglass coated	
		B			Teflon coated	
		C			Fiberglass with S.S. overbraid	
		D			Teflon with S.S. overbraid	
		E			Fiberglass with S.S. flex armor	
		F			Teflon with S.S. flex armor	
					Installed depth (C)	
					mm	**Inches**
Installed depth (C)[2]			03		27 to 40	1 1/16″ to 1 9/16″
			04		48 to 57	1 7/8″ to 2 1/4″
			05		57 to 70	2 1/4″ to 2 3/4″
			06		73 to 83	2 7/8″ to 3 1/4″
			07		86 to 95	3 3/8″ to 3 3/4″
			08		98 to 108	3 7/8″ to 4 1/4″
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			18		225 to 235	8 7/8″ to 9 1/4″
			19		238 to 248	9 3/8″ to 9 3/4″
			20		251 to 260	9 7/8″ to 10 1/4″
					Wire length (D)	
Wire length (D)[3]				A	4.5 meters	15 feet
				B	7.6 meters	25 feet

NOTES:

[1] Use the value in the Lead wire protection (E) section of the AMOT valve part number on page 6.

[2] Use the value in the Installed depth (F) section of the AMOT valve part number on page 6.

[3] Use the value in the Wire length (G) section of the AMOT valve part number on page 6.

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