



Data Sheet

Standard and Miniature Cavity Pressure Sensors



PRIAMUS SYSTEM TECHNOLOGIES,

branch of Barnes Group Suisse Industries LLC
Rheinweg 4
CH-8200 Schaffhausen / Schweiz

Phone: +41 (0)52 632 26 26
Fax: +41 (0)52 632 26 27
Email: info@priamus.com
Internet: www.priamus.com

Document no:

DS094e Standard and Miniature Cavity Pressure Sensors

Edition 01.23

Subject to change without notice.

© 2023 PRIAMUS SYSTEM TECHNOLOGIES, Schaffhausen, Switzerland

Table of Contents

1	Product Description.....	1
1.1	PRIASED® - Automatic Sensitivity Detection	1
1.2	PRIASAFE™ - Installation-safe Sensor with Protective Cover.....	2
1.3	Summary	2
1.4	Technical Data	3
1.5	Marking Example	4
1.6	Identification Plate	4
1.7	Connectors.....	4
1.8	Connection Cables.....	5
1.9	Type Overview.....	6
2	Mounting.....	11
2.1	Mounting Places	11
2.2	Preparations.....	11
2.3	Mounting Variants	12
2.4	Mounting Sensors with Standard Connectors.....	14
2.4.1	Mounting the Sensor Head.....	14
2.4.2	Mounting Variant with Mounting Nut.....	14
2.4.3	Mounting Variant with PRIAFIT® Mounting Sleeve	16
2.4.4	Mounting Variant with Distance Sleeve	18
2.5	Mounting Sensors with Angled Connectors.....	20
2.5.1	Mounting Sensor with Mounting Disc.....	20
2.6	Mounting Connector on Mounting Plate	21
3	Scope of Delivery and Accessoires.....	22
3.1	Scope of Delivery.....	22
3.2	Accessories.....	23
4	Services.....	24
4.1	General Terms and Conditions	24
4.2	Warranty and Guarantee.....	25

1 Product Description

Cavity pressure sensors are the standard for industrial monitoring and control of the injection molding process. For decades, sensors of this type have been used to determine the physical properties of an injection molding part during production and - if necessary - to adjust them accordingly.

Over the years, piezoelectric measurement technology has established itself for this application, as the sensor itself is ideal for this purpose. Due to the sometimes very fast injection processes, requirements arise that can only be met by very compact and rigid sensor constructions. The reason is the high natural frequency of the sensor, which results from this. The piezoelectric sensor is an active sensor, i.e. no power supply and no electronics are required in the sensor. This makes it suitable for high temperatures, as they are sometimes found in injection molds, even if the size is small.

Some of our standard and miniature cavity pressure sensors are available with a hardened sensor front, which significantly increases the service life, especially when using abrasive or chemically aggressive melts.

1.1 PRIASED® - Automatic Sensitivity Detection

PRIASED® is a system for automatic sensitivity detection for cavity pressure sensors. Measurement data on sensor sensitivity are stored on a hardware code, which is permanently installed in the sensor housing.

PRIASED® offers the following advantages in summary:

- Automatic assignment of the correct settings: The user does not need to worry about the correct sensitivity values of the sensors.
- Due to the automatic assignment there is no mix-up.
- Thanks to a robust and temperature-resistant design, the data on the hardware code can survive even high temperatures.

In recent years, the concept of automatic sensitivity detection has become widely accepted in process monitoring and closed-loop process control. Automation as required in the „IoT“ (Internet of Things) environment is hardly conceivable from today's point of view with manual settings.

1.2 PRIASAFE™ - Installation-safe Sensor with Protective Cover

Cavity pressure sensors are highly sensitive measuring instruments that deliver very precise results. The sensitive part of the sensor must stand freely in the bore and may not touch the bore wall. If this happens anyway, the sensor sensitivity is reduced due to the so-called «force shunt» and the measurement results are therefore incorrect.

PRIASAFE™ is a concept in which the sensor is surrounded by a protective cover. This protects the sensor from negative force effects due to incorrect installation and thus ensures correct measurement results.

1.3 Summary

PRIAMUS® standard and miniature cavity pressure sensors offer the following advantages in summary:

- Optimized for use in injection molds
- Robust and temperature-resistant construction
- Sensor front can be adapted to the cavity
- Some sensors are available with a hardened sensor front
- Some sensors have an automatic sensitivity detection PRIASED®
- Some sensors have a PRIASAFE™ protective cover
- Suitable for all melt temperatures
- Based on the piezoelectric measuring principle
- Compatible to all charge amplifiers respectively injection molding machines
- All sensors with separable cable
- Measuring range up to 2000 bar

1.4 Technical Data

Properties	Specification	
Maximum melt temperature (plastics) in the cavity ¹⁾	No limitation	
Max. mold temperature	0 ... 200 °C / 32 ... 392 °F	
Sensitivity ²⁾	Types 6001A / 6001B	10 pC / bar
	Types 6002B	5 pC / bar
	Types 6003A / 6003B	5 pC / bar
	Types 6006BC, 6007BC, 6008AA, 6010BC	2 pC / bar
Measuring range	0 ... 2000 bar / 0 ... 29008 psi / 0 ... 200 MPa	
Overload	2500 bar / 36260 psi / 250 MPa	
Linearity deviation	< ±1 %	
Natural frequency ³⁾	> 80 kHz	
Insulation resistance	> 10 ¹³ Ω (at 20°C)	

- 1) The plastic melt cools immediately after contacting the cavity wall. The melt temperature is therefore without any practical meaning for the sensor (thermoplastics). For thermosets and elastomers the permanent melt temperatures are usually below 200 °C.
- 2) The exact sensitivity is provided on a separate calibration sheet.
- 3) The actual natural frequency of the sensor is far higher than the frequency spectrum of the effective signal.

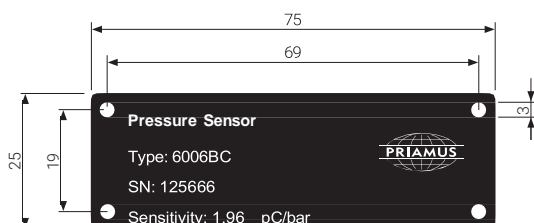
1.5 Marking Example

The type number of our standard and miniature cavity pressure sensors is composed of the following elements:

	6001Bx.x-102-H-W
6001	Sensor type
B	Index
x.x	Cable length in [m]
102	Fischer connector type
H	Hardened sensor front
W	Angled connector

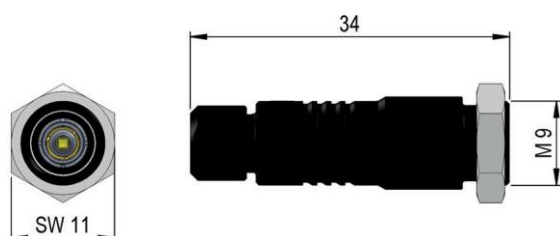
1.6 Identification Plate

All standard and miniature cavity pressure sensors are tested and provided with a serial number. Thus, all test results and all sensors are traceable. This data is located on the identification plate, which can be attached to the mold.



1.7 Connectors

All connection cables of our standard and miniature cavity pressure sensors have a Fischer connector type KBE 102 negative TRIAX.



1.8 Connection Cables

x.x designates the cable length (total length with cable and connector) in [m] and must be specified when ordering. We offer the following standard dimensions: 0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 2.0, 3.0, 4.0, 5.0 m.

The following points should be particularly noted with regard to cable length:

- When designing, make sure that the cable length is not too short and not too long so that the sensor can be mounted without any problems.
- The cable must be long enough to accommodate the remaining cable length in the bore (keywords: volume and stiffness).
- The shorter the cable, the stiffer it is and the more difficult it is to accommodate in the bore.
- When using multi-channel connector boxes, the cables must be long enough to be plugged in when the cover of the connector box is removed.

The following manufacturing tolerances apply to the cables:

Total cable length with connector [m]	Tolerance + .../-0 mm
< 0.50 m	5 mm
0.51 m.....1.00 m	10 mm
1.01 m ... 5 m	20 mm

The following maximum bending radius apply to the connection cables:

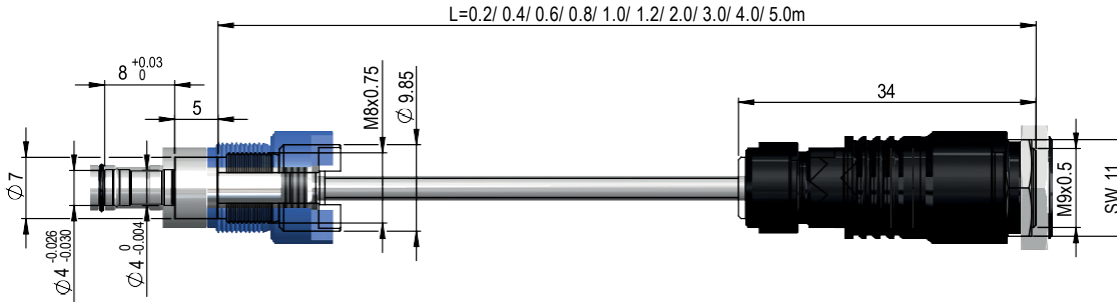
Connection cable	Max. bending radius
Connection cable type 1002D	9 mm
Connection cable type 1009B	9 mm
Connection cable type 1010C	5 mm
Connection cable type 1011A	5 mm
Connection cable type 1019A	9 mm
Connection cable type 1020A	9 mm

1.9 Type Overview

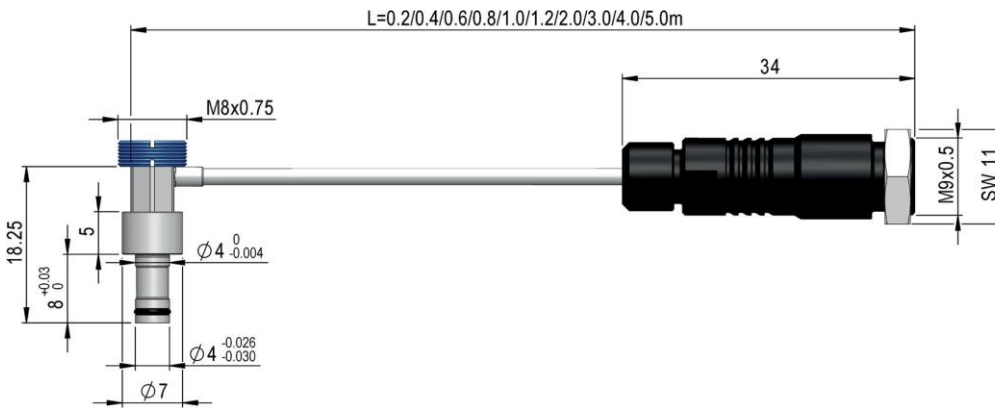
This chapter lists all available standard and miniature cavity pressure sensors.

	6001Ax.x-102	6001Ax.x-102-H	6001Bx.x-102	6001Bx.x-102-H	6001Bx.x-102-W	6001Bx.x-102-H-W	6002Bx.x-102	6002Bx.x-102-H	6002Bx.x-102-W	6002Bx.x-102-H-W	6003Ax.x-102	6003Ax.x-102-H	6003Bx.x-102	6003Bx.x-102-H	6003Bx.x-102-W	6003Bx.x-102-H-W	6006Bx.x-102	6006Bx.x-102-W	6007Bx.x-102	6008Ax.x-102	6010Bx.x-102	6010Bx.x-102-W
With automatic sensitivity detection PRIASED®			•	•	•	•	•	•	•	•			•	•	•	•	•	•	•		•	•
With PRIASAFE™							•	•	•	•							•	•	•		•	•
Sensor front:																						
Machinable	•	•	•	•			•	•			•	•	•	•			•			•	•	
Non-machinable					•	•			•	•					•	•		•	•			•
Hardened		•		•		•		•		•		•		•		•						
Connection cables																						
Connection cable type 1002D	•	•									•	•										
Connection cable type 1009B			•	•			•	•					•	•								
Connection cable type 1010C																	•		•		•	
Connection cable type 1011A																				•		
Connection cable type 1019A					•	•			•	•					•	•						•
Connection cable type 1020A																		•				•
Dummies																						
Dummy type 6501A	•	•	•	•																		
Dummy type 6501A-W					•	•																
Dummy type 6502A							•	•														
Dummy type 6502A-W									•	•												
Dummy type 6503A											•	•	•	•								
Dummy type 6503A-W															•	•						
Dummy type 6508A																					•	
Dummy type 6512A																		•				
Dummy type 6512A-W																			•			
Dummy type 6513A																				•		
Dummy type 6514A																						•
Dummy type 6514A-W																						•

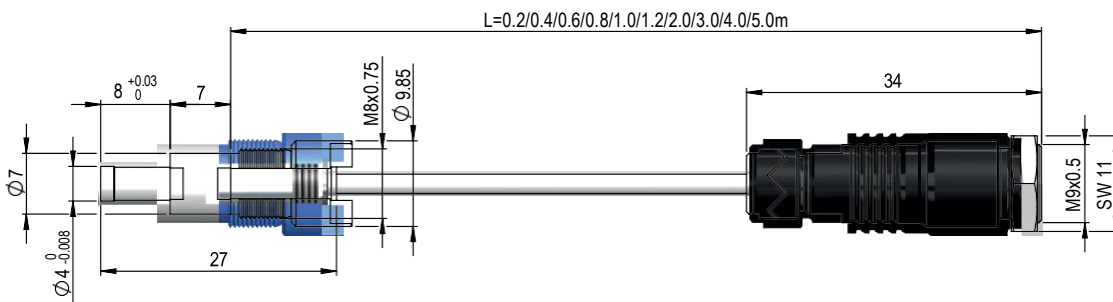
Types 6001Ax.x-102(-H) and 6001B.x-102(-H)



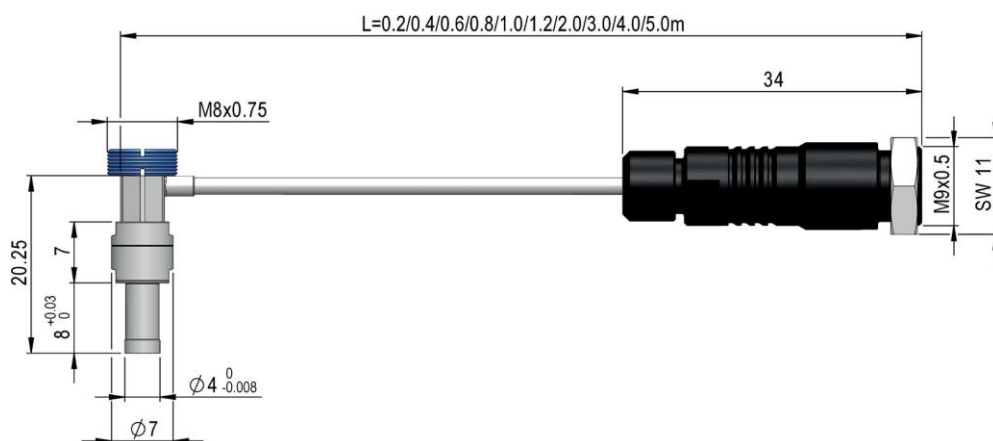
Type 6001Bx.x-102(-H)-W



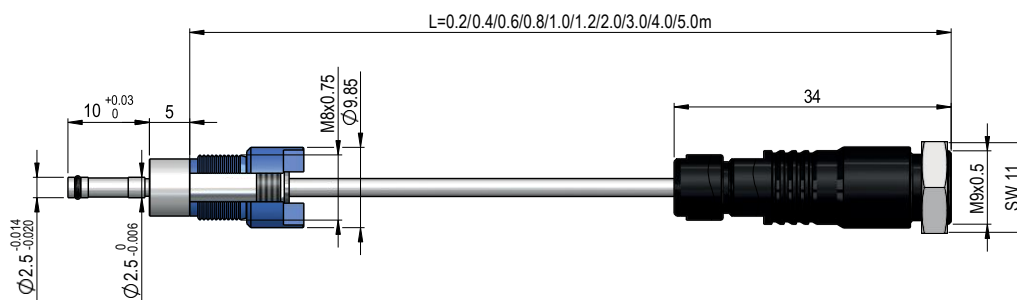
Type 6002Bx.x-102(-H)



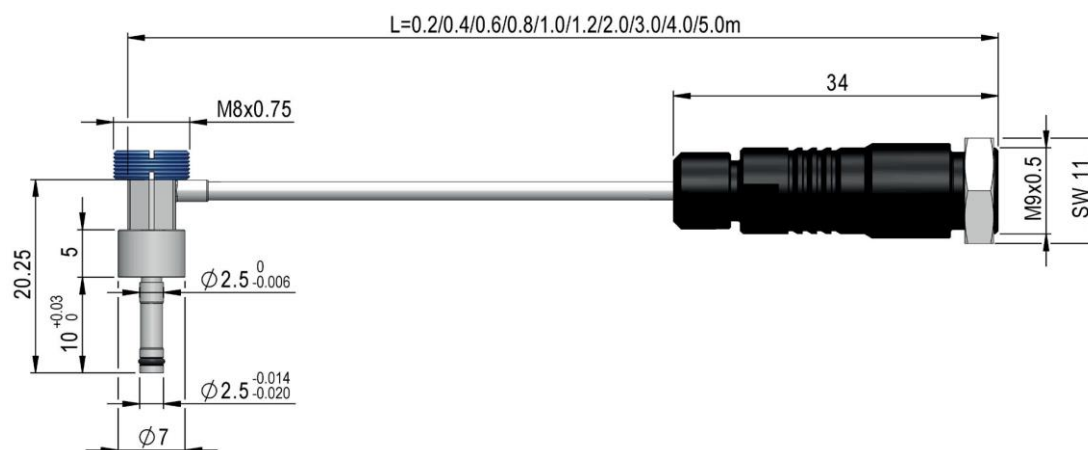
Type 6002Bx.x-102(-H)-W



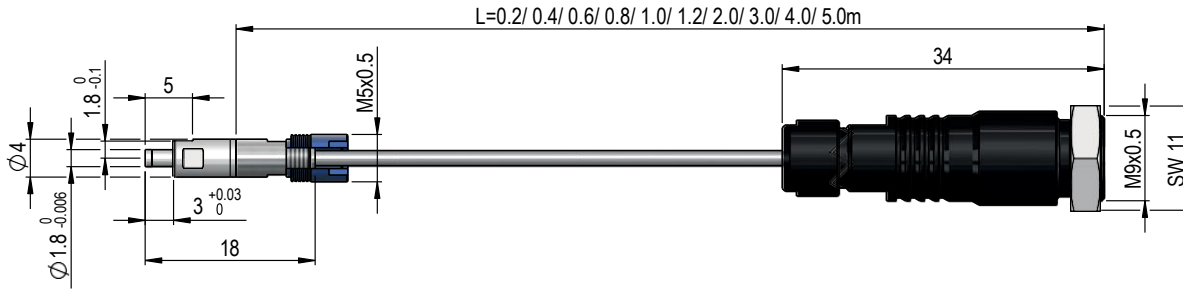
Types 6003Ax.x-102(-H) and 6003Bx.x-102(-H)



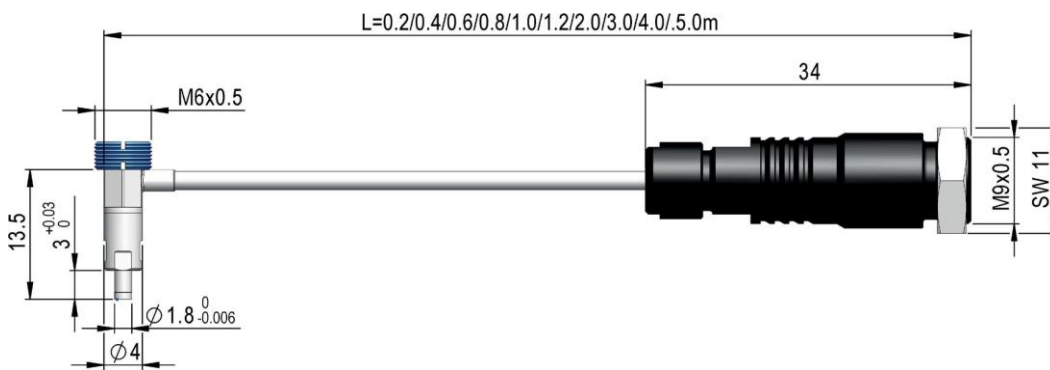
Type 6003Bx.x-102(-H)-W



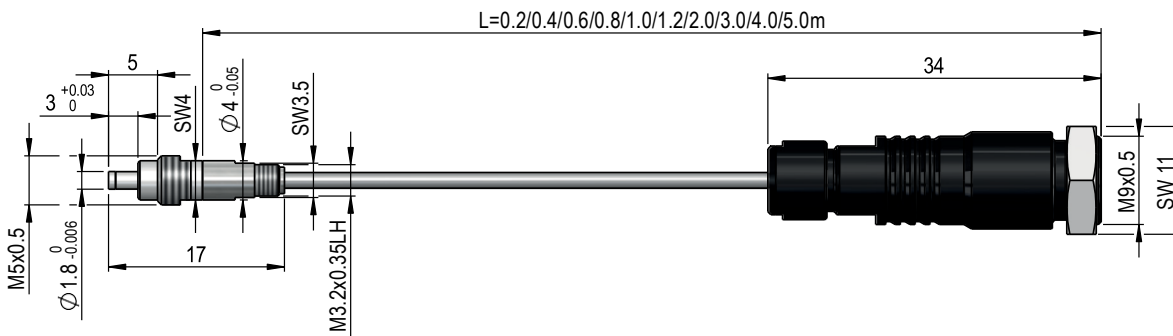
Type 6006BCx.x-102



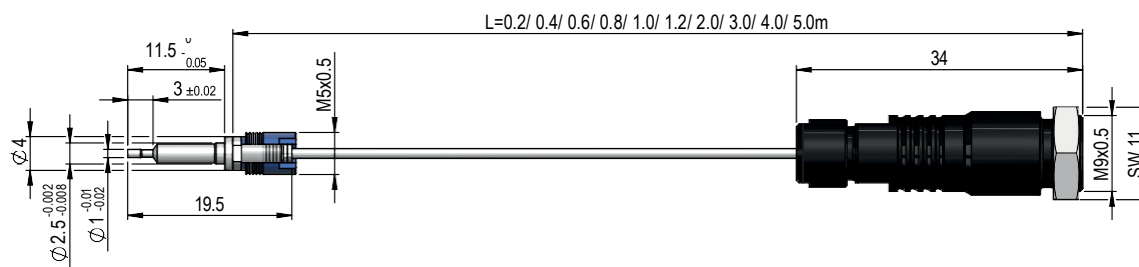
Type 6006BCx.x-102-W



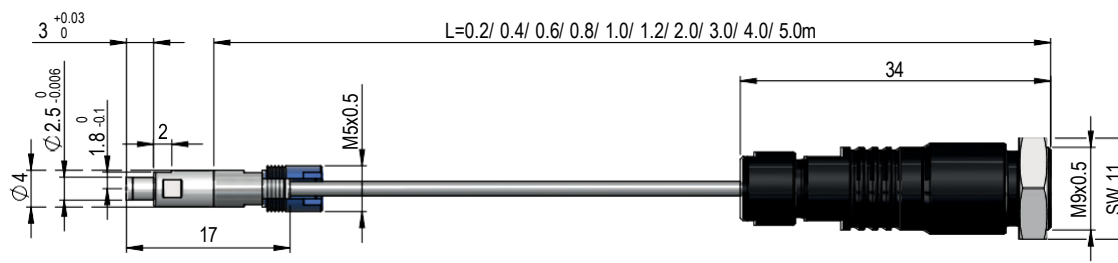
Type 6007BCx.x-102



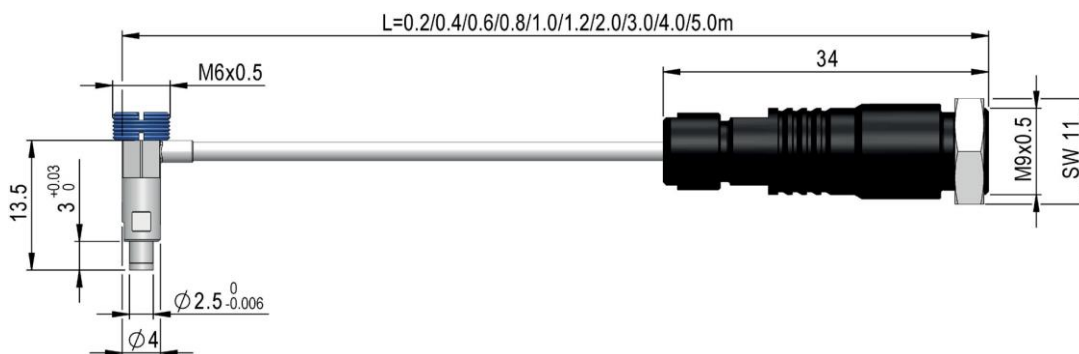
Type 6008AAx.x-102



Type 6010BCx.x-102



Type 6010BCx.x-102-W



2 Mounting

2.1 Mounting Places

Cavity pressure sensors are usually installed at the beginning of the flow path for general applications. For special applications, they are also placed differently at the points where corresponding properties of the molding part must be detected, for example, for mold filling detection, consistency monitoring, etc. For existing molds, defect images of the parts are helpful. The following list shows applications and recommendations for installation location. We will be happy to advise you on the selection and placement of the sensors in your specific application.

Application	Recommended mounting place
Process optimization, general monitoring	- Near the gate - On a thick wall of the part - Before first baffle
Consistency monitoring	In the relevant position
Monitoring and control of viscosity	Before of the cavity temperature sensor
Monitoring and control of shrinkage	Around the the cavity temperature sensor
Mold filling detection	At the end of the flow path

2.2 Preparations

The basic prerequisite for accurate and problem-free measurement is a perfectly manufactured sensor bore. If the specified tolerances are not observed, large measuring errors, discontinuities in the measuring signal, extreme imprints on the molded part and defective sensors are possible as a result. To obtain a correspondingly fast temperature signal, the sensor front must be installed flush with the cavity wall.

It is therefore essential to observe both the dimensions and the shape and position tolerances described in this chapter. The cable channel respectively the bore must also be sufficiently dimensioned so that the cable can be inserted with a loop. Please note in general that the function of the sensor can no longer be guaranteed if the sensor cables are damaged or if the connectors are contaminated or damaged.

Before you start with the sensor installation, the following instructions must be followed:

- Only use mounting and extracting tools from PRIAMUS.
- The dimensions and tolerances specified in the bore drawings must be observed.
- All channels and bores must be cleaned free of chips & burrs.
- All contact surfaces must be flat and level.
- All sharp edges must be chamfered or rounded (R2 or 3 x 45°).
- All open cable channels must be covered.
- Do not pull on the connection cable.
- The connection cable must not be crushed or kinked during installation.

Notice

The sensor front can be machined and adapted to the surface of the cavity. In this case, the sensor is secured against rotation with a keyseat feature. For sensor types 6001, 6002 and 6003, an keyseat can be incorporated by a moldmaker if required. For types 6006, 6008 and 6010, the sensor positioning is already provided ex works.

Notice

The sensor type 6007 is an exception due to its special mounting situation (sensor thread). No machining of the sensor front is possible.

Notice

Cavity pressure sensors from PRIAMUS are available with different front diameters. Basically, the largest possible diameter should always be selected, since on the one hand the signal yield improves with larger diameter, and on the other hand the precision of the sensor bore decreases with increasing diameter.

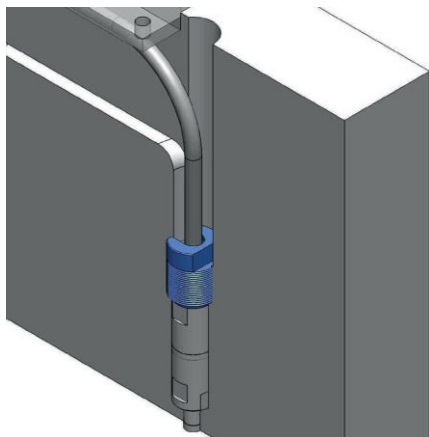
2.3 Mounting Variants

Standard and miniature cavity pressure sensors are available with standard connector and with angled connector. Depending on the connector, different mounting variants are available. For sensors with angled connectors, there are only the mounting variant with mounting disc, while for sensors with standard connectors, the mounting variants with mounting nipple, with PRIAFIT® mounting sleeve or with distance sleeve are available.

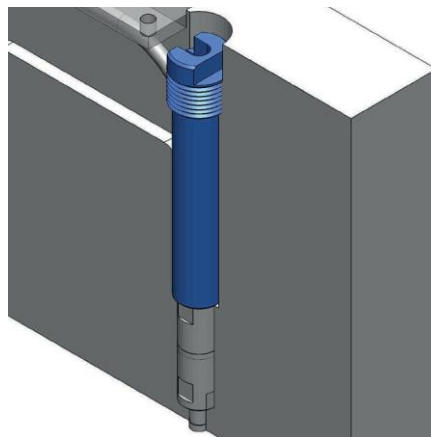
- With mounting nut (see chapter „2.4.2 Mounting Variant with Mounting Nut“ on page 14)
- With PRIAFIT® mounting sleeve (see chapter „2.4.3 Mounting Variant with PRIAFIT® Mounting Sleeve“ on page 16)
- With distance sleeve (see chapter „2.4.4 Mounting Variant with Distance Sleeve“ on page 18)
- With mounting disc (see chapter „2.5.1 Mounting Sensor with Mounting Disc“ on page 20)

Types with standard connector

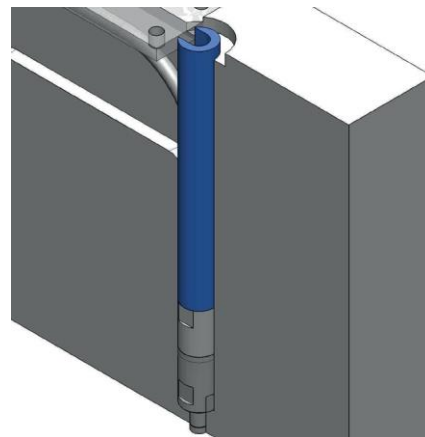
Mounting with mounting nut types 6541A or 6544B



Mounting with PRIAFIT® mounting sleeve types 6530A or 6531A

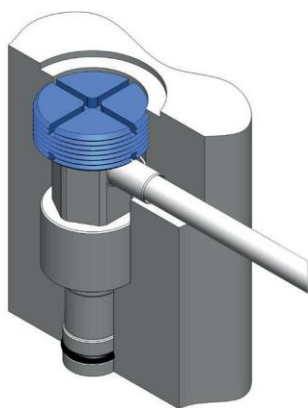


Mounting with distance sleeve types 6522A and 6523B

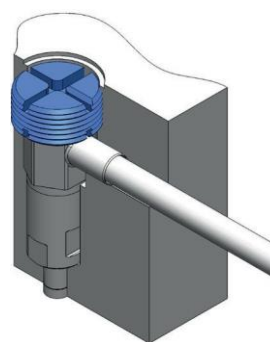


Types with angled connector

Mounting with connection cable type 1019A and mounting disc type 6550A



Mounting with connection cable type 1020A and mounting disc type 6551A



2.4 Mounting Sensors with Standard Connectors

2.4.1 Mounting the Sensor Head

For all three installation variants, the sensor head must first be mounted in the bore.

The following mounting and extracting tools are used to mount the sensors:

Mounting and extracting tools	Sensor types
Type 6561B	6001, 6002, 6003
Type 6568A	6008
Type 6569A	6006, 6007*, 6010

* Type 6007 is not installed with a mounting nut, but is fixed in the bore with the existing sensor thread.

Notice

The sensor front must be flush with the mold wall (cavity). Rework the bore if necessary.

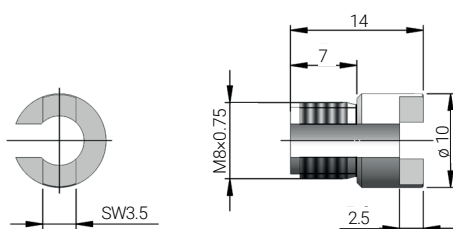
2.4.2 Mounting Variant with Mounting Nut

Two different mounting nuts are used for installation, depending on the sensor type. The following assignments and tightening torques apply to the mounting nuts:

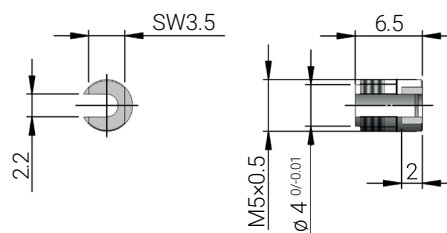
Mounting nut	Sensor types	Assembly tool	Tightening torque
Type 6541A	6001, 6002, 6003	6562B	3.5 Nm
Type 6544B	6006, 6008	6567C	1.0 Nm
Type 6544B	6010	6567C	1.2 Nm
Sensor thread*	6007	-	1.0 Nm

* Type 6007 is not installed with a mounting nut, but is fixed in the bore with the existing sensor thread.

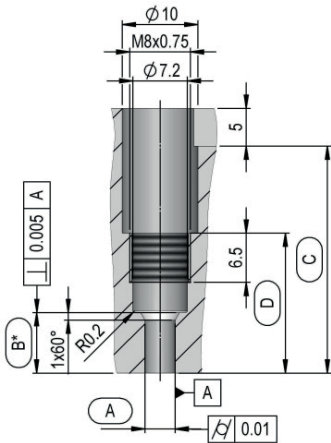
Mounting nut type 6541A



Mounting nut type 6544B

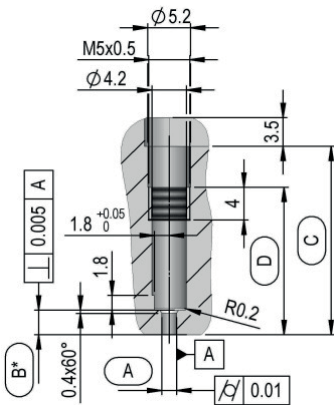


24.2.1 Bore Drawings



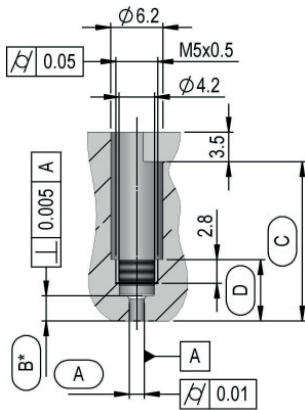
Typ	A ^{+0.005/+0.018}	B*	C min.	D
6001A(-H)	4	8	30	18.5
6001B(-H)	4	8	30	18.5
6002B(-H)	4	8	32	20.5
6003A(-H)	2.5	10	32	20.5
6003B(-H)	2.5	10	32	20.5

* Adjust dimensions



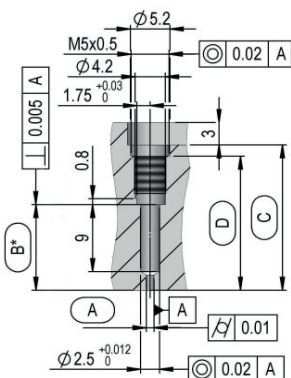
Type	A ^{+0.005/+0.012}	B*	C min.	D
6006BC	1.8	3	23	18
6010BC	2.5	3	23	18

* Adjust dimensions



Type	A ^{+0.005/+0.012}	B*	C min.	D
6007BC	1.8	3	19	7.3

* Adjust dimensions



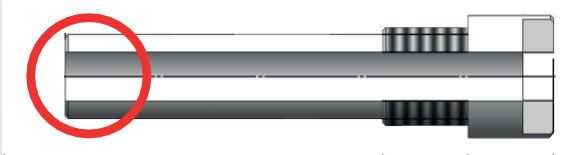
Type	A ^{0/+0.012}	B*	C min.	D
6008AA	1	11.5	19	18

* Adjust dimensions

2.4.3 Mounting Variant with PRIAFIT® Mounting Sleeve

Notice

Shorten the PRIAFIT® mounting sleeve on the sensor side (+/- 0.2 mm) before mounting, turn over and grind over the surface. Then deburr and break the edges.

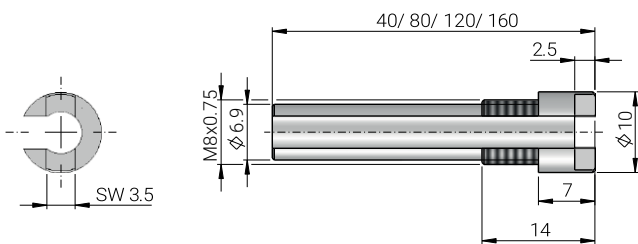


The following assignments and tightening torques apply to PRIAFIT® mounting sleeves:

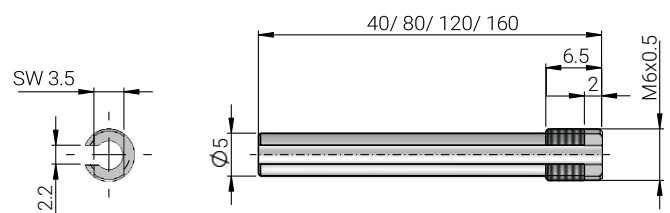
PRIAFIT® mounting sleeve	Sensor types	Assembly tool	Tightening torques
Type 6530A	6001, 6002, 6003	6562B	3.5 Nm
Type 6531A	6006, 6008	6567C	1.0 Nm
Type 6531A	6010	6567C	1.2 Nm

The cut-to-length PRIAFIT® mounting sleeve is inserted into the bore and then twisted in place using the appropriate mounting tool.

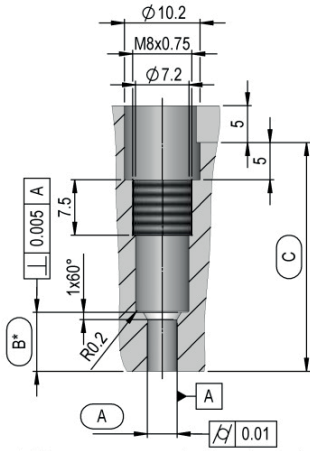
PRIAFIT® mounting sleeve type 6530A



PRIAFIT® mounting sleeve type 6531A

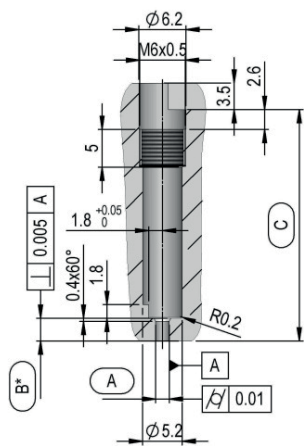


24.3.1 Bore Drawings



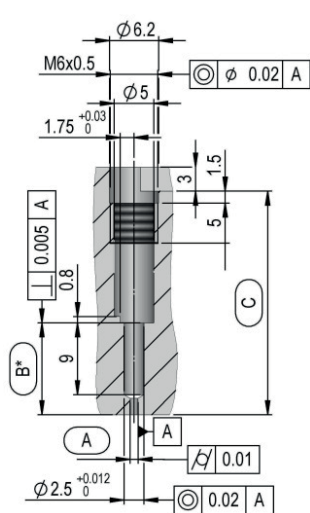
Type	A ^{+0.005/+0.018}	B*	C 6530A	C 6530A0.08	C 6530A0.12	C 6530A0.16
6001A(-H)	4	8	37-56	37-96	37-136	37-176
6001B(-H)	4	8	37-56	37-96	37-136	37-176
6002B(-H)	4	8	39-58	39-98	39-138	39-178
6003A(-H)	2.5	10	39-58	39-98	39-138	39-178
6003B(-H)	2.5	10	39-58	39-98	39-138	39-178

* Adjust dimensions



Type	A ^{+0.005/+0.012}	B*	C 6531A	C 6531A0.08	C 6531A0.12	C 6531A0.16
6006BC	1.8	3	29-56	29-96	29-136	29-176
6010BC	2.5	3	29-56	29-96	29-136	29-176

* Adjust dimensions



Type	A ^{0/+0.012}	B*	C 6531A	C 6531A0.08	C 6531A0.12	C 6531A0.16
6008AA	1	11.5	30-54	30-94	30-134	30-174

* Adjust dimensions

2.4.4 Mounting Variant with Distance Sleeve

Notice

The distance sleeve must not be shortened on the sensor side (recognizable by the flat surface). Also observe possible preloads when cutting to length (max. 0.02 mm). Deburr and break the edges afterwards.

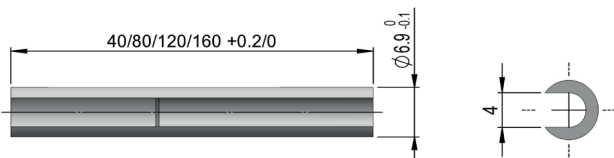
Notice

In order to simplify the removal of the distance sleeve, we recommend making a clearance at the bore.

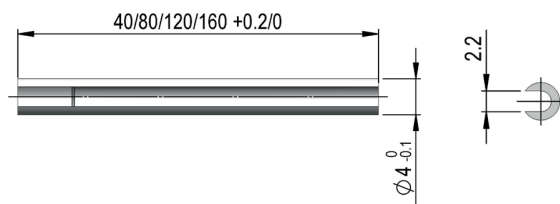
The distance sleeves are assigned to the following sensor types:

Distance sleeve	Sensor types
Type 6522A	6001, 6002, 6003
Type 6523B	6006, 6008, 6010

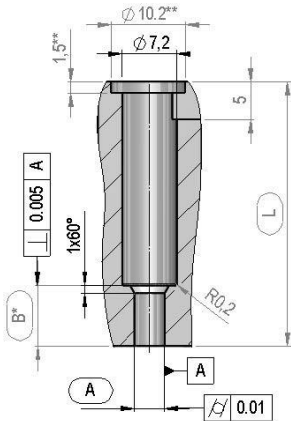
Distance sleeve type 6522A



Distance sleeve type 6523B



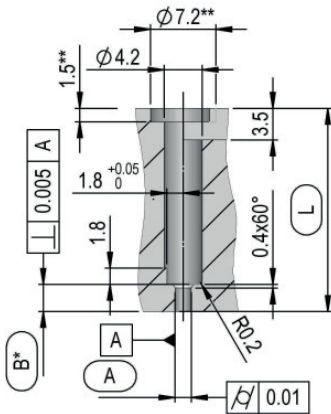
24.4.1 Bore Drawings



Type	A ^{+0.005/+0.018}	B*	L 6522A	L 6522A0.08	L 6522A0.12	L 6522A0.16
6001A(-H)	4	8	30-53	30-93	30-133	30-173
6001B(-H)	4	8	30-53	30-93	30-133	30-173
6002B(-H)	4	8	32-55	32-95	32-135	32-175
6003A(-H)	2.5	10	32-55	32-95	32-135	32-175
6003B(-H)	2.5	10	32-55	32-95	32-135	32-175

* Adjust dimensions

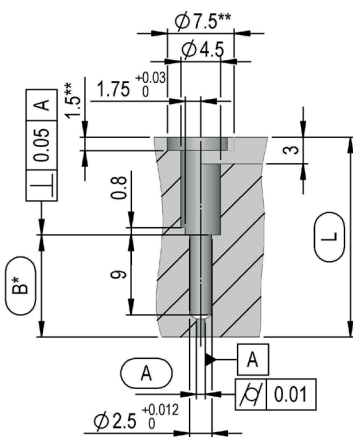
** For the disassembly of the distance sleeve, we recommend machining a recess.



Type	A ^{+0.005/+0.012}	B*	L 6523A	L 6523A0.08	L 6523A0.12	L 6523A0.16
6006BC	1.8	3	19 - 55	19 - 95	19 - 135	19 - 175
6010BC	2.5	3	19 - 55	19 - 95	19 - 135	19 - 175

* Adjust dimensions

** For the disassembly of the distance sleeve, we recommend machining a recess.



Type	A ^{0/+0.012}	B*	L 6523A	L 6523A0.08	L 6523A0.12	L 6523A0.16
6008AA	1	11.5	19.5 - 53.5	19.5 - 93.5	19.5 - 133.5	19.5 - 173.5

* Adjust dimensions

** For the disassembly of the distance sleeve, we recommend machining a recess.

2.5 Mounting Sensors with Angled Connectors

Sensors with angled connector are always mounted with a mounting disc. With this mounting variant, the sensor head must also be mounted in the bore first, then the mounting disc is mounted.

2.5.1 Mounting Sensor with Mounting Disc

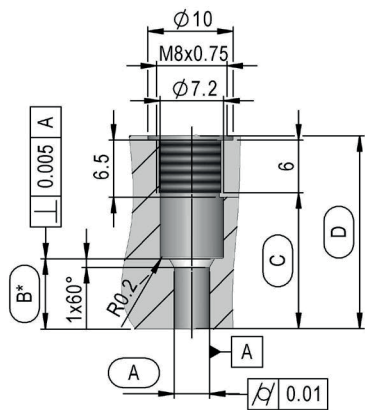
Notice

The sensor front must be flush with the mold wall (cavity). Rework the bore if necessary.

The following tightening torques apply:

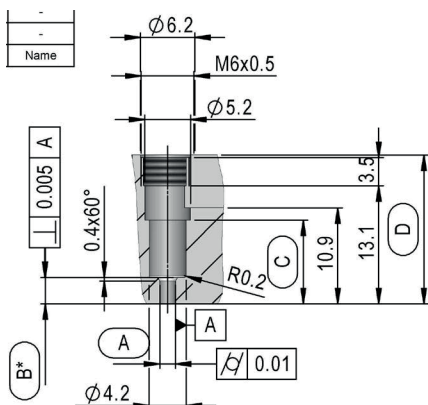
Sensor types	Mounting disc	Tightening torques
6001Bx.x-102(-H)-W	6550A	3.5 Nm
6002Bx.x-102(-H)-W	6550A	3.5 Nm
6003Bx.x-102(-H)-W	6550A	3.5 Nm
6006BCx.x-102-W	6551A	1.0 Nm
6010BCx.x-102-W	6551A	1.2 Nm

2.5.1.1 Bore Drawings



Type	A ^{+0.005/+0.018}	B*	C	D min.
6001A(-H)	4	8	16	22.3
6001B(-H)	4	8	16	22.3
6002B(-H)	4	8	18	24.3
6003A(-H)	2.5	10	18	24.3
6003B(-H)	2.5	10	18	24.3

* Adjust dimensions



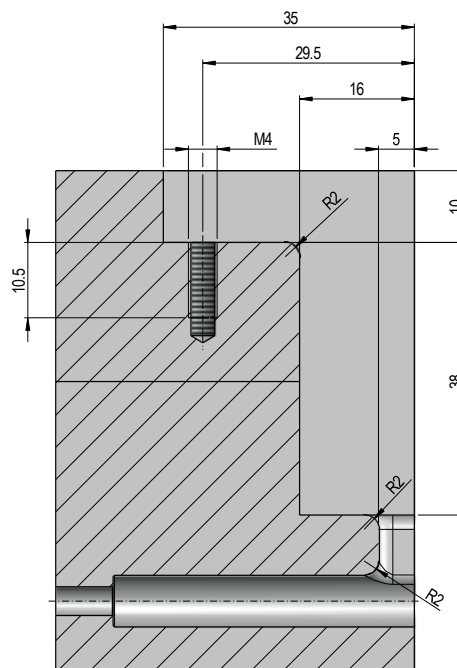
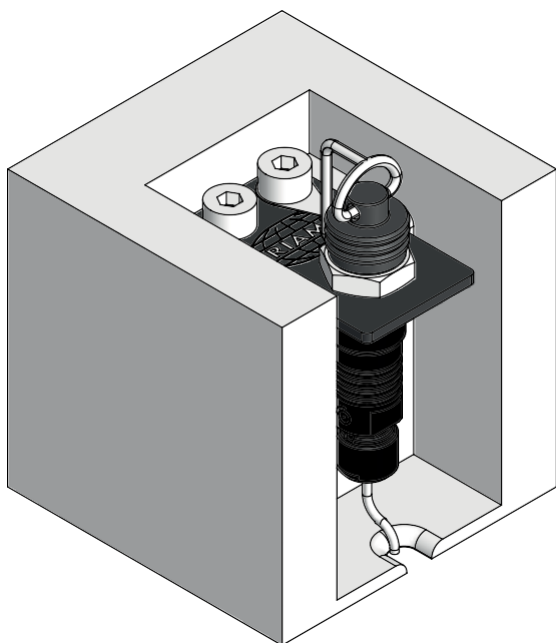
Type	A ^{+0.005/+0.012}	B*	C	D min.
6006BC	1.8	3	9.5	16.9
6010BC	2.5	3	9.5	16.9

* Adjust dimensions

2.6 Mounting Connector on Mounting Plate

Notice

The protective cover is attached to the mounting plate of the connector and should not be placed too close to the parting line of the mold so that it does not get between the mold halves when the mold is closed.



3 Scope of Delivery and Accessories

3.1 Scope of Delivery

	6001Ax.x-102	6001Ax.x-102-H	6001Bx.x-102	6001Bx.x-102-H	6001Bx.x-102-W	6001Bx.x-102-H-W	6002Bx.x-102	6002Bx.x-102-H	6002Bx.x-102-W	6002Bx.x-102-H-W	6003Ax.x-102	6003Ax.x-102-H	6003Bx.x-102	6003Bx.x-102-H	6003Bx.x-102-W	6003Bx.x-102-H-W	6006BCx.x-102	6006BCx.x-102-W	6007BCx.x-102	6008AAx.x-102	6010BCx.x-102	6010BCx.x-102-W	
Connection cable type 1002D	●	●									●	●											
Connection cable type 1009B			●	●			●	●					●	●									
Connection cable type 1010C																	●		●			●	
Connection cable type 1011A																				●			
Connection cable type 1019A					●	●			●	●					●	●							
Connection cable type 1020A																		●					●
Mounting nut type 6541A	●	●	●	●			●	●			●	●	●	●									
Mounting nut type 6544B																	●			●			●
Mounting disc type 6550A						●	●			●	●				●	●							
Mounting disc type 6551A																		●					●
Mounting disc type 6581B	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Identification plate	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Other Cables:																							
Connection cables 1041A/1049B	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Multi-pin connection cables types 1045B/1047A/1054B	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Extension cable type 1043B	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

3.2 Accessories

	6001Ax.x-102	6001Ax.x-102-H	6001Bx.x-102	6001Bx.x-102-H	6001Bx.x-102-W	6001Bx.x-102-H-W	6002Bx.x-102	6002Bx.x-102-H	6002Bx.x-102-W	6002Bx.x-102-H-W	6003Ax.x-102	6003Ax.x-102-H	6003Bx.x-102	6003Bx.x-102-H	6003Bx.x-102-W	6003Bx.x-102-H-W	6006BCx.x-102	6006BCx.x-102-W	6007BCx.x-102	6008AAx.x-102	6010BCx.x-102	6010BCx.x-102-W	
Distance sleeve type 6522A	•	•	•	•			•	•			•	•	•	•									
Distance sleeve type 6523B																	•			•	•		
PRIAFIT® mounting sleeve type 6530A	•	•	•	•			•	•			•	•	•	•							•	•	
PRIAFIT® mounting sleeve type 6531A																	•			•	•		
Mounting / extracting tool for sensor type 6561B	•	•	•	•			•	•			•	•	•	•									
Assembly tool for mounting nut and mounting sleeve type 6562B	•	•	•	•			•	•			•	•	•	•									
Assembly tool for mounting nut and mounting sleeve type 6567C																	•			•	•		
Mounting / extracting tool for sensor type 6568A																			•	•	•		
Mounting / extracting tool for sensor type 6569A																	•		•	•	•		
Assembly tool for mounting the sensor type 6570A																			•	•	•		
Assembly aid type 6585A																				•	•		
Assembly tool for sensor and mounting nut consists of: torque wrench type 1320A and bitset type 1321A				•	•				•	•						•	•		•				•
Multi-channel connector box type 1195A-8p	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Dummies																							
Dummy type 6501A	•	•	•	•																			
Dummy type 6501A-W				•	•																		
Dummy type 6502A						•	•																
Dummy type 6502A-W								•	•														
Dummy type 6503A											•	•	•	•									
Dummy type 6503A-W															•	•							
Dummy type 6508A																				•	•		
Dummy type 6512A																	•						
Dummy type 6512A-W																			•	•			
Dummy type 6513A																				•	•		
Dummy type 6514A																						•	•
Dummy type 6514A-W																							•

4 Services

4.1 General Terms and Conditions

The following general terms of service apply:

- A delivery for test purposes is declined.
- The customer is responsible for installing and interfacing. Installation for any of the above directly by PRIAMUS will be charged separately.
- Information on interfaces must be provided to PRIAMUS minimum 2 weeks before installation. If this information is not available, PRIAMUS has the right to refuse installation on the agreed date.
- PRIAMUS requires presence of the process/ project manager and plant electrician on the day of installation. Refusal of this support will cause additional cost and will be charged separately, as this could cause unnecessary delays for the start up.
- Waiting times caused by the customer on site will be charged separately.
- Prices for training, installation and other expenditures will be quoted and confirmed in writing.
- Unless otherwise agreed upon, brochures and catalogues are not binding. Data provided for in documentation are only binding in so far as having been expressly stipulated as such. We reserve the right to modify any specification without notice.
- Information and drawings, delivered in addition to the sales documentation, may not be transmitted to any third party. The Customer may not transmit or make use of any information regarding the design or the functionality of PRIAMUS products in any form whatsoever. Any product schematics, drawings or supplemental information are the property of PRIAMUS and considered company confidential for use by direct customer only. In the event of infringement of this clause we retain the right for claiming damages.

4.2 Warranty and Guarantee

Our warranty covers all defects within the agreed warranty period from the date of delivery. The warranty applies to all occurring defects that are proven to have their cause in material defects or faulty manufacturing.

The warranty is limited to replacement or repair of the defective products or components or to reimbursement of the invoice value of the products or components not replaced. Any further warranty is hereby expressly excluded. Replaced products are property of PRIAMUS. The customer is responsible for the replacement costs (i.e. removal, transportation and assembly) of defective parts.

Excluded from our guarantee and liability are all deficiencies of the goods delivered by us, which cannot be proved to have their origin in bad material, faulty design or poor workmanship, those resulting from normal wear (e.g. current consumption, recuperation, weather condition, air pollution, electromagnetic effects in excess of what is considered acceptable, improper maintenance, failure to observe the operating instructions, excessive loading, testing, use of any unsuitable material, influence of chemical or electrolytic action, or resulting from other reasons beyond the supplier's control.

All claims on the part of the Customer, irrespective on what ground they are based, which are not allowed under these general conditions, in particular any claim not expressly mentioned, such as for damages, reduction of price or withdrawal from the contract are excluded.

In no case whatsoever shall the Customer be entitled to claim damages, in particular but not be limited, to loss of production, loss of use, loss of orders, loss of profit and other direct or indirect consequential damage. This exclusion of liability, however, does not apply to unlawful intent or gross negligence on our part, but apply to unlawful intent or gross negligence of persons employed or appointed by us to perform any of his obligations. The Customer is responsible to arrange for and pay for the return shipment to us or to our local representative.