

# ThermoCOMP®

Type 6067C...

## Water-cooled Precision Cylinder Pressure Sensor

Water-cooled precision cylinder pressure sensor with small dimensions, especially suited for small combustion engines and for thermodynamic investigations in the laboratory.

Fitting with or without water cooling by means of a mounting sleeve. High sensitivity, high natural frequency and excellent zero point stability thanks to built-in water cooling.

- Smallest water-cooled cylinder pressure sensor
- Thermo-shock optimized double diaphragm
- Long life thanks to TiN coating and metal cable

### Description

The use of polystable quartz elements assures security against twinning even under high mechanical loading. As a result, the sensitivity remains largely constant from  $-50 \dots 350 \text{ }^\circ\text{C}$  and the sensor continues to operate without damage even if the water cooling fails.

Thanks to its anticorrosive effect, the TiN coating extends the life of the diaphragm.

### Application

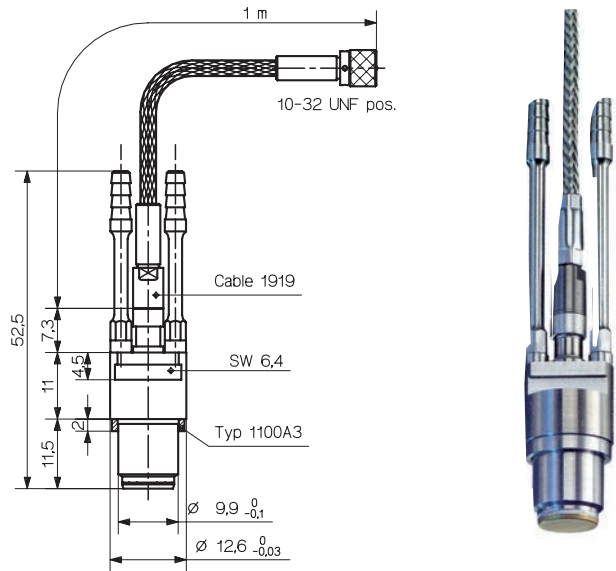
The miniature sensor Type 6067C... is well suited for thermodynamic measurements in small combustion engines where no space is available for mounting of the sensor Type 6067B (M10).

The low sensitivity to thermal shock and the excellent zero point stability, thanks to built-in water cooling, yield precise measuring results.

Moreover, the excellent linearity in the whole range and the high sensitivity allow gas exchange to be analyzed accurately.

### U20 Version

For applications mainly in the knocking range or at very high pressure rises, use of Type 6052C...U20 with reinforced diaphragm (heavy duty version) is recommended.



### Technical Data

Range	bar	0 ... 250	
Calibrated partial ranges	bar	0 ... 50	
	bar	0 ... 5	
Overload	bar	300	
Sensitivity	pC/bar	$\approx -25$	
Natural frequency	kHz	$\approx 90$	
Linearity, all ranges	% FSO	$\leq \pm 0,3$	
Acceleration sensitivity	axial (with cooling)	bar/g	$\leq 0,01$
	radial (with cooling)	bar/g	$\leq 0,001$
Operating temperature range	$^\circ\text{C}$	$-50 \dots 350$	
	Cooling water flow	l/min	0,3 ... 0,5
Sensitivity shift	$50 \pm 35 \text{ }^\circ\text{C}$	%	$\leq \pm 0,5$
	$50 \dots 350 \text{ }^\circ\text{C}$	%	$\leq \pm 2$
Thermo shock (at 1 500 1/min $p_{mi} = 9 \text{ bar}$ )	$\Delta p$ (short time drift)	bar	$< \pm 0,2$
	$\Delta p_{mi}$	%	$\leq \pm 1$
	$\Delta p_{max}$	%	$\leq \pm 1$
	Insulation resistance at $20 \text{ }^\circ\text{C}$	$\Omega$	$\geq 10^{13}$

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## Technical Data

Shock resistance	g	2 000
Tightening torque	N·m	10
Cooling water pressure	bar	≤6
Capacitance, (with cable)	pF	60
Weight	g	14
Connector, ceramic insulator	Type	M4x0,35

### Type 6067C...U20 (other specifications as for Type 6067C...)

Sensitivity	pC/bar	25
Measuring range	bar	0 ... 300
Calibrated partial range	bar	0 ... 100, 0 ... 200, 0 ... 300
Overload	bar	350
Sensitivity shift 250 °C ± 100 °C	%	≤±3,5
Thermo shock error (at 1 500 1/min $p_{mi} = 9$ bar)		
$\Delta p$ (short time drift)	bar	≤±0,5
$\Delta p_{mi}$	%	≤±3
$\Delta p_{max}$	%	≤±1

## Mounting Examples

The sensor Type 6067C... may be mounted directly into a  $\emptyset 10H9$  hole. Fig. 1 shows flush mounting with the wall of the combustion chamber. Fig. 2 shows mounting with recessed diaphragm.

Fig. 3 shows the sensor Type 6067C... fitted in a cylinder head using the mounting sleeve Type 6472Asp.

The flush mounting must be preferred in order to avoid pipe resonances.

## Accessories

Accessories	Type/Art. No.
• High temperature connecting cable M4x0,35 – 10-32 pos., l = 1 m	1919
• Coupling 10-32 neg. – BNC pos.	1721
• Coupling 10-32 neg. – BNC neg.	1725
• Cr-Ni-steel seal	1100A3
• Connecting tube for cooling water	1225A2
• Polyethylen hose for cooling water	1203Bsp
• Viton® hose for cooling water	1203Csp
• Adapter for pressure generator Type 6905A	6954
• Adapter for pressure generator Type 6904	6586
• Dummy sensor, like Type 6067C...	6444C
• Extractor for Type 6444	1319
• Dismounting tool for cable	1300A49

## Mounting Accessories

- Torque wrench 8 ... 40 N·m
- Fork wrench hex.16 mm for Type 6472Asp and torque wrench 4 ... 20 N·m
- Mounting sleeve

## Type

1300A11
1300A39
6472Asp70 ...150

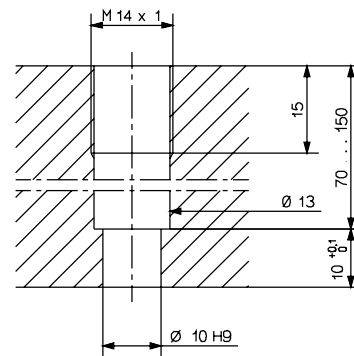


Fig. 1: Mounting bore flush-mounted

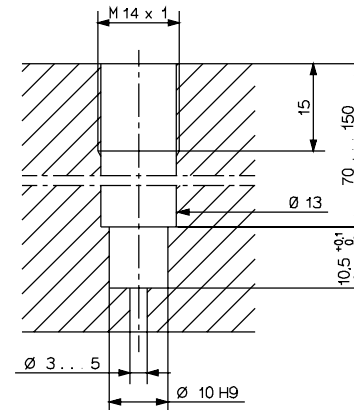


Fig. 2: Mounting bore recessed mounting

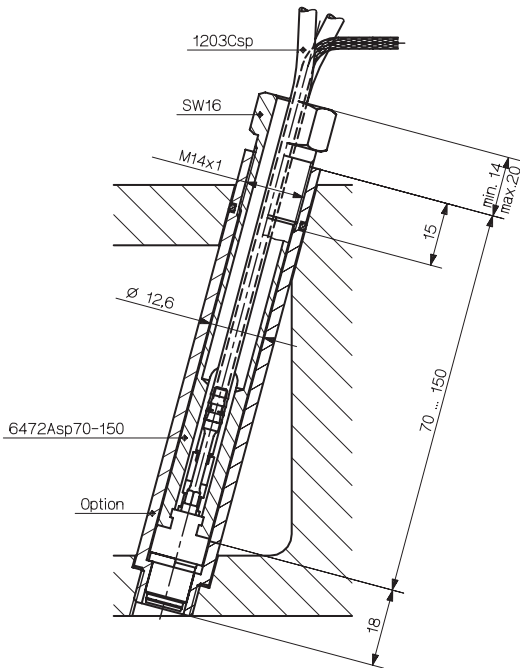


Fig. 3: Using the mounting sleeve

### Ordering Key

		Type 6067C	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Without PiezoSmart®	-		↑			
With PiezoSmart®	S			↑		
<b>Cable Version</b>						
With metal braiding	3			↑		
<b>Cable Length</b>						
1 m	1				↑	
<b>Version</b>						
Standard	-					↑
Reinforced diaphragm	U20					↑

For PiezoSmart® specifications please refer to the PiezoSmart brochure doc. no. 100-421.

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