

# High Temperature Pressure Sensor for Glow Plug Adapter with Small Diameter

Type 6058A...

Patent No. US 6,105,434

Pressure sensor Type 6058A... is designed specifically for use in glow plug adapters with small diameters where the use of a sensor Type 6056A... is not possible. Sensors with special lengths are not necessary. This greatly simplifies the preparation for combustion analysis measurements and storekeeping.

- Ideal for measurements with glow plug adapter Type 6544Q...
- Good temperature stability of the sensitivity
- Acceleration compensated
- Front diameter  $\varnothing 4,0$  mm
- Low thermal shock error and long life due to front seal
- High sensitivity
- Highly miniaturized plug connection (M3 size)

## Description

In Type 6058A... the PiezoStar<sup>®</sup>, a new piezoelectric crystal from Kistler is used with which a sensitivity of  $-17$  pC/bar and high thermal stability is achieved. The sensitivity changes by not more than  $\pm 0,5$  % over a temperature range of  $200 \pm 50$  °C. The front seal allows good heat dissipation permitting a maximum operating temperature of  $400$  °C for brief duration.

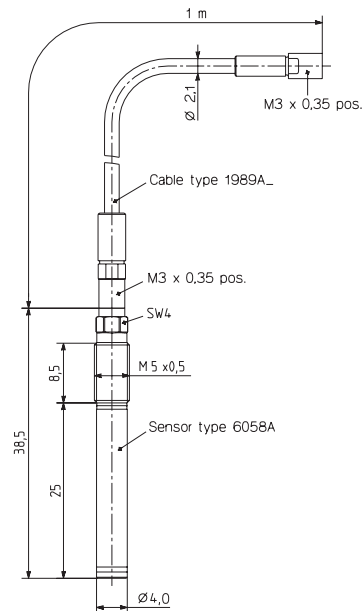
The connector enables pressure sensors of standard length to be installed in varying length glow plug adapters. This distinctly simplifies the preparation for indicating measurements and storekeeping.

## Application

The miniature sensor is used typically in glow plug adapters for pressure measurement in diesel engines (Fig. 3); see also data sheet 6542Q\_000-570.

However, due to its small dimensions, it can also be used in engines with complex structural geometries in indicating bores.

The rugged, turned diaphragm also allows measurements beyond the knocking limit; at the same time, thanks to its low thermal shock error, very accurate thermodynamic investigations are still assured.



## Technical Data

Measuring range	bar	0 ... 250
Calibrated ranges	bar	0 ... 50, 0 ... 100, 0 ... 150, 0 ... 250
Overload	bar	300
Sensitivity	pC/bar	$\approx -17$
Natural frequency, nominal	kHz	$\approx 160$
Linearity in all ranges (at 23 °C)	%/FSO	$\leq \pm 0,3$
Acceleration sensitivity	bar/g	$< 0,0005$
Operating temperature range	°C	$-20 \dots 350$
temperature min./max.		$-50 \dots 400$
Sensitivity shift		
200 $\pm$ 50 °C	%	$\leq \pm 0,5$
23 ... 350 °C	%	$\leq \pm 2$
Short term drift (thermal shock) (at 1500 1/min, $p_{mi} = 9$ bar)		
$\Delta p$ (Short term drift)	bar	$\leq \pm 0,5$
$\Delta p_{mi}$	%	$\leq \pm 2$
$\Delta p_{max}$	%	$\leq \pm 1$
Insulation resistance at 23 °C	$\Omega$	$\geq 10^{13}$
Shock resistance	g	2 000
Tightening torque	N·m	1,2
Capacitance, without cable	pF	5
Weight with cable	g	30
Connector, ceramic insulator	–	M3x0,35

Page 1/3

This information corresponds to the current state of knowledge. Kistler reserves the right to make technical changes. Liability for consequential damage resulting from the use of Kistler products is excluded.

©2009 ... 2012, Kistler Group, Eulachstrasse 22, 8408 Winterthur, Switzerland  
Tel. +41 52 224 11 11, Fax +41 52 224 14 14, info@kistler.com, www.kistler.com  
Kistler is a registered trademark of Kistler Holding AG.



**Included Accessories**

- Cable according ordering key
- Coupling M3x0,35 neg. – BNC pos.

Type/Art. No.

1706

**Optional Accessories**

- Coupling M3x0,35 neg. – BNC pos. 1706
- Cable 1989A...
- Mounting key
  - ø5,6 mm, not slotted 1300A14
  - ø5,6 mm, slotted 1300B14
  - ø7,3 mm, slotted 1300B14Q01
- Torque wrench 1 ... 6 N·m 1300A17
- Special drilling tool 1300A18
- Special screw tap M5x0,5 1357A
- Mounting sleeve 6561A1...
- O-ring for mounting sleeve 5.110.055
- Adapter for pressure generator Type 6904 6591
- Finishing tool for bore 1300A111
- Temperature probe 6058AT
- Dummy 6405A1
- Extraction tool for dummy 1349

**Ordering Key**

Type 6058A

Without PiezoSmart®	–
With PiezoSmart®	S

<b>Cable Type</b>	
Without cable	–
Fluoropolymer	4

<b>Cable Length</b>	
Without cable	–
1 m	1
2 m	2
Cable with special length, L stated in m (L <sub>min</sub> = 0,15 m/L <sub>max</sub> = 3,5 m)	9

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

**Ordering Examples: Type 6058A...**

- Version without cable Type 6058A
- Version with 1 m fluoropolymer cable Type 6058A41
- Version with PiezoSmart and 2 m fluoropolymer cable Type 6058A42

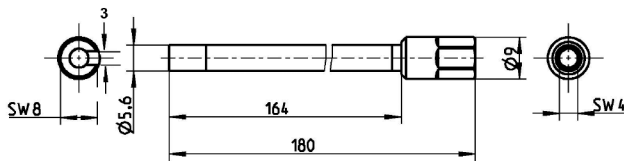


Fig. 5: Mounting wrench Type 1300A14

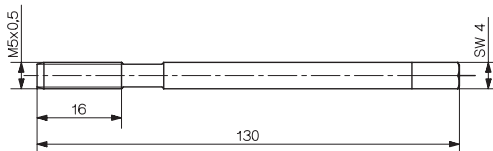


Fig. 6: Special screw tap Type 1357A

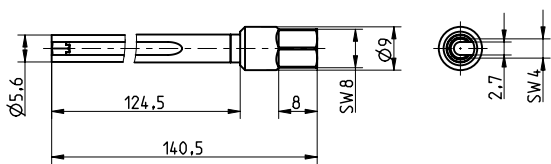


Fig. 7: Mounting wrench ø5,6 mm, slotted, Type 1300B14

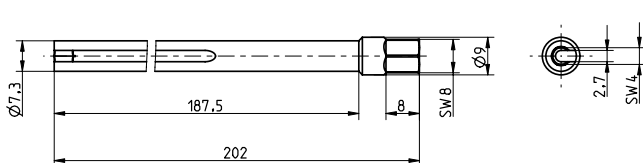


Fig. 8: Mounting wrench ø7,3 mm, slotted, Type 1300B14Q01

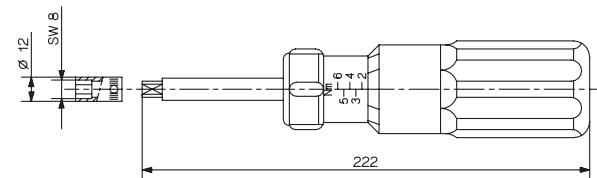


Fig. 9: Torque wrench Type 1300A17

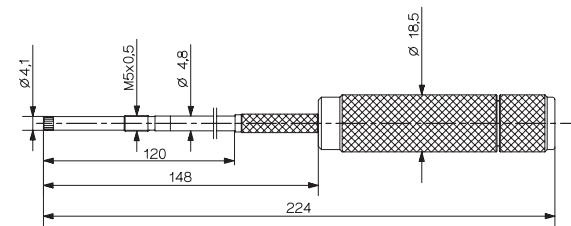


Fig. 10: Reaming tool Type 1300A111

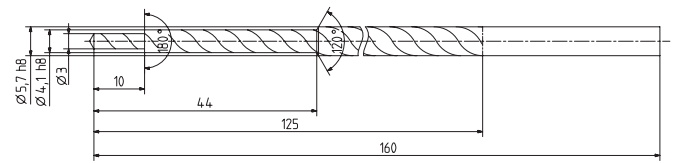


Fig. 11: Step drill Type 1300A18

6058A\_000-573e-07.12