



PRESSURE SENSOR FOR COMBUSTION ANALYSIS

Data Sheet



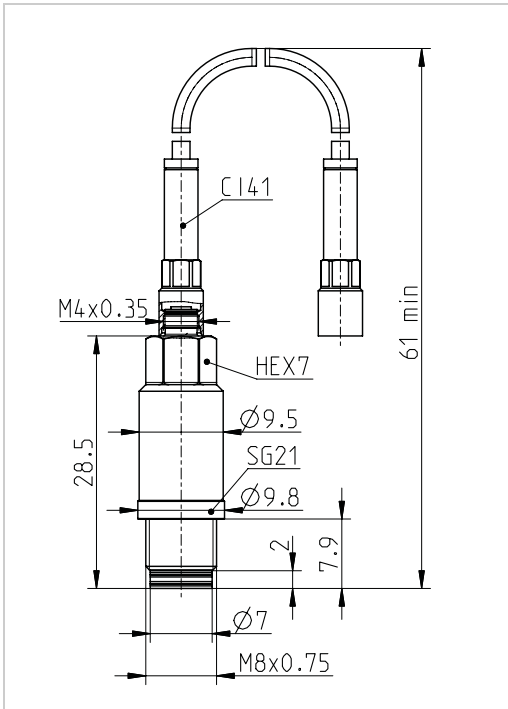
GU24D
TIGG1329A.01

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The GU24D is a sensor which combines the convenient installation of M8 thread-type sensors with the high accuracy that is required for precise thermodynamic analysis. The Double Shell™ design gives high mechanical isolation from the influences of the mounting bore. Specially trimmed piezo-elements are used to achieve excellent linearity of the output signal. The GU24D is equipped with SID Sensor Identification to support SDM Sensor Data Management.



Specifications

Measuring range	0 ... 250 bar		
Overload	300 bar		
Lifetime	≥	10 ⁸	load cycles
Sensitivity	45 pC/bar nominal		
Linearity	≤ ±	0.3%	FSO
Natural frequency	~	92 kHz	
Acceleration sensitivity	≤	0.002 bar/g	axial
Shock resistance	≥	2000 g	
Insulation resistance	≥	10 ¹³ Ω	at 20 °C
Capacitance	8 pF		
Operating temperature range	-40 ... 400 °C		
Thermal sensitivity change	≤	1%	20 ... 400 °C
	≤ ±	0.25%	250 ± 100 °C
Load change drift	4 mbar/ms max. gradient		
Cyclic temperature drift *	≤ ±	0.3 bar	
Thermo shock error **			
	Δp	≤ ±	0.2 bar
	Δp _{mi}	≤ ±	1%
	Δp _{max}	≤ ±	1%
Thread diameter	M8x0.75		shoulder sealed
Cable connection	M4x0.35		negative
Weight	14 grams		without cable
Mounting torque	6 Nm		

Scope of Supply

- Sensor GU24D
- Protection cap
- Piezo-input cable C141-1 and 2 spare O-rings
- Fitted coupling CC41 and gasket SG21
- 1 Spare gasket SG21
- Calibration sheet and documentation

*) at 7 bar IMEP and 1300 rpm, diesel

**) at 9 bar IMEP and 1500 rpm, gasoline

Icons of strength / Measurement Task

	<p>Toughness / knock applications Purpose: Specially designed to withstand under extreme and harsh conditions</p>	<p>Examples: Analysis of knocking combustion, operation under high engine loads, supercharged engines.</p>		<p>Gallium Orthophosphate GaPO4 Patented unique crystal material.</p>	<p>Today, GaPO4 is by far the best suited piezoelectric material to be used in sensor applications. It has a combination of several unique properties that make it the first choice.</p>
	<p>Precision / thermodynamic analysis Purpose: Very highly accurate measurements for critical thermodynamic analysis.</p>	<p>Examples: Measurements for heat release and friction loss calculations</p>		<p>Double Shell™ Mechanically decouples the crystals from the housing for premium signal quality.</p>	<p>Due to their high sensitivity, these elements are also susceptible to any other kind of applied pressure which would else cause a misreading of the combustion pressure</p>
	<p>Durability / endurance testing Purpose: Specially designed to withstand under extreme and harsh conditions</p>	<p>Examples: Onboard monitoring of large marine or stationary engines</p>		<p>SDM Sensor Data Management Increasing efficiency due to organized workflow.</p>	<p>SDM guarantees end-to-end automated data transfer and thus ensures errorfree measurements. This solution covers the complete measurement chain running from the sensor to the software.</p>

Contact Information

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