

PMP-S221: A sensor solution for pressure ranges that exceed standard industrial load conditions

The PMP-S221 is a logical extension of the product line for applications in which even our bestseller PMP-S222 can no longer operate within its intended performance range.

The PMP-S222 remains our flagship model, as it covers the majority of typical industrial requirements: from pump and compressor units to mobile machinery and energy systems, as well as installations with liquid and gaseous media operating in pressure ranges up to 900 bar.

Its versatility and operational stability have made it our most widely used sensor.

However, there are numerous processes in which the pressure significantly exceeds typical values, or in which loads occur so abruptly and unpredictably that conventional sensors—including the S222—can no longer withstand these conditions.

The PMP-S221 was developed specifically for such demanding use cases.

WHAT THE PMP-S221 OFFERS AND WHY IT IS REQUIRED IN REAL INDUSTRIAL APPLICATIONS?

1. Operating range up to 5000 bar – for assemblies designed for extreme pressure levels

The PMP-S221 is intended for pressure measurement in assemblies and systems that are structurally engineered for operation up to 5000 bar.

The objective is not to increase a machine's pressure resistance, but to ensure precise pressure monitoring in heavily loaded systems in which conventional sensors are not physically capable of surviving.

Typical fields of application include:

- high-pressure systems (hydraulic presses, extrusion lines)
- material forming and processing equipment
- test benches for valves, pipelines, and gas cylinders
- systems for explosion-resistance and burst-pressure testing
- high-pressure pumps in industrial and oil & gas environments

2. 17-4PH membrane – for applications where pressure is not only high, but constantly fluctuating with peaks and impulses

In many processes, the critical factor is not the maximum pressure itself, but its dynamic behaviour.

Pressure surges, sudden load peaks, and cyclic operating modes impose considerable mechanical stress on the sensitive measuring element.

The 17-4PH stainless steel membrane provides increased fatigue strength and wear resistance compared to standard materials, enabling stable sensor operation under demanding dynamic conditions.

Particularly relevant in:

- heavily loaded pumps and compressors
- processes with frequent high-pressure on/off cycles
- impact, pendulum, and impulse-type machinery
- power modules in which individual operating cycles generate pressure shocks

- **PMP-S222** is the universal baseline solution for industrial applications up to 900 bar, covering the majority of standard processes.
- **PMP-S221** is a structurally reinforced model designed for assemblies where pressure and dynamic loads exceed typical industrial conditions by a substantial margin.

The PMP-S221 does not replace the widely used S222; rather, it complements it by enabling precise pressure measurement in the most demanding and critical applications.