

ILPS22QS

Industrial pressure sensor with dual full-scale and Qvar



Dual full-scale selectable pressure range and Qvar technology in an industrial MEMS pressure sensor

The ILPS22QS is an ultra-compact, piezoresistive, absolute pressure sensor for industrial applications that behaves as a digital output barometer. It's the first industrial ST pressure sensor to support a selectable dual full-scale pressure range up to 1260 hPa or 4060 hPa.

Its full-molded package makes it ideal for measuring air pressure and smart filter maintenance in industrial applications with temperatures up to 105°C.

The ILPS22QS embeds analog hub sensing used to implement essential Qvar technology for water leakage detection.

KEY FEATURES & BENEFITS

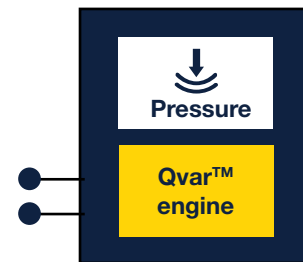
- Dual full-scale absolute pressure selectable up to 1260 hPa or 4060 hPa
- Wide operating temperature -40°C to 105°C
- High accuracy and resolution
- Embedded temperature compensation
- Low power consumption and low noise
- Qvar sensor embedded
- Supports 8 different ODR from 1 Hz to 200 Hz
- Unique full-molded package with small vent holes and suspended membrane

KEY APPLICATIONS

- Industrial applications
- Gas and water metering
- Weather station equipment
- Altimeter/barometer for outdoor applications
- HVAC and smart filters

Qvar technology

ILPS22QS embeds an ST charge variation sensing technology known as Qvar. This sensing channel is very effective in applications like water leakage detection and gesture recognition interactions like a tapping, double-tap, long press, and swiping. The Qvar electrostatic sensor is also ideal for human presence and user activity detection, contact and proximity checking, floor level, and liquid detection. Analog hub sensing functionality is also included to convert analog inputs to digital signals for embedded processing.



Target applications

The ILPS22QS is suitable for a range of applications, including industrial altimeters, smart filters for airflow detection, ventilators, metering, and even industrial wearable applications like man-down detection.



Altimeters and barometers



Smart filters



Ventilators and CPAP equipment



Gas metering
Leakage detection



Man-down detection

Evaluation tools

Part number	General description
STEVAL-MKI109V3	ST MEMS adapters motherboard based on the STM32F401VE and compatible with all ST MEMS adapters
STEVAL-MKI228KA	Pressure sensor kit with Qvar functionality

Ordering information

Part number	General description	Temperature range (°C)	Pressure range (hPa)		Pressure accuracy (hPa)	Operating current (µA)	Package size (mm)
			Min.	Max.	Typ.	Typ.	
ILPS22QS	Dual full-scale absolute digital output barometer with embedded Qvar electrostatic sensor for industrial application	-40 to +105	260 260	1260 4060	±0.5 ±0.28% ¹	1.8 (LP) ² 9.2 (HP) ²	2 x 2 x 0.73

Note 1: 0.28% of input pressure

Note 2: LP: low-power mode; HP: high-performance mode



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