

LPS28DFW

Waterproof pressure sensor for wearables and mobile phones



First waterproof pressure sensor with selectable scale for depth in water and activity out of water

The LPS28DFW is an ultra-compact piezoresistive waterproof pressure sensor, which functions as a digital output barometer.

Thanks to the dual full-scale mode (FS), the device provides wide coverage on both altimeter and water depth (up to 30 meters depth). Another winning feature of the LPS28DFW is its lower power consumption and lower RMS noise.

The LPS28DFW is the right pressure sensor for delivering the high level of functionality users want and expect in personal electronics and consumer applications.

KEY FEATURES & BENEFITS

- Dual full-scale absolute pressure
 - selectable up to 1260hPa or 4060hPa
- Water-resistant package
- Current consumption down to 1.7 μ A
- Absolute pressure accuracy: 0.5 hPa
- Low pressure sensor noise: 0.32 Pa
- Embedded temperature compensation

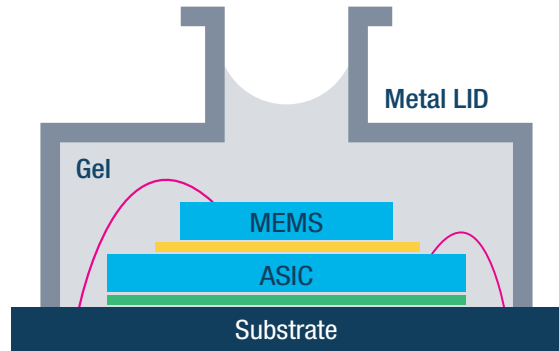
KEY APPLICATIONS

- Wearables
- Altimeters and barometers for portable devices
- GPS applications
- Weather station equipment
- Sport watches
- e-cigarettes
- Water depth monitoring

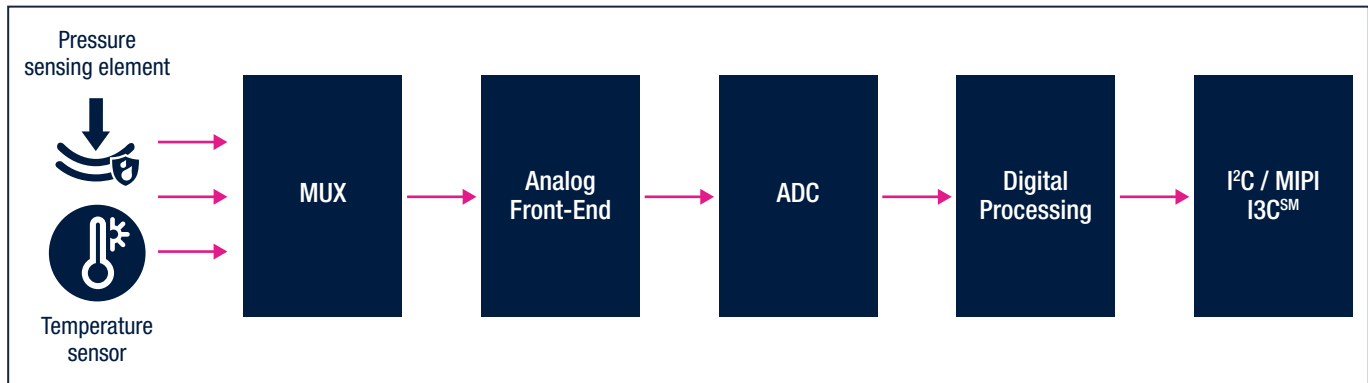
A look inside

The cylindrical package of the LPS28DFW features a full metal lid assembled on a ceramic substrate. This unique package design allows simplified assembly in end-user applications using o-rings.

The package can also help designers meet target specifications with an appropriate PCB layout. The metal lid can be connected to ground to improve ESD or left floating to improve RF EMI.



LPS28DFW block diagram



Evaluation kits

STEVAL-MKI109V3 (motherboard; professional MEMS tool)

STEVAL-MKI225A (adapter board with LPS28DFW sensor and DIL24 connector) adapter board usable with the following boards:

- **STEVAL-MKI109V3** motherboard with DIL24 socket for evaluation with host PC
- customer target boards for fast system prototyping

For further information, go to www.st.com/pressure.

Ordering information

Order code	Description	Temperature range (°C)	Pressure range (hPa)		Pressure accuracy (hPa)	Operating current (µA)	Package size (mm)
			Min.	Max.	Typ.	Typ.	
LPS28DFWTR	Dual full scale, absolute digital output barometer with water-resistant package	-40 to +85	260 260	1260 4060	±0.5 ±0.36% of input pressure	1.7 (LP)* 9.4 (HP)*	2.8 x 2.8 x 1.95

Note: LP: low-power mode / HP: high-performance mode



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