



Sensors

MPXHZ9000

Xtrinsic pressure sensors for engine management and efficiency

Overview

Freescale has provided pressure sensors for over 30 years that enable you to design applications that meet government regulations and consumers' requirements for cleaner, more fuel-efficient vehicles while delivering high performance. Our latest Xtrinsic pressure sensors, the MPXHZ9115A and MPXHZ9400AC offer significant advantages for the automotive engine control market as well as other consumer and industrial applications.

The MPXHZ9115A and MPXHZ9400AC are absolute temperature-compensated piezo-resistive pressure sensors. The MPXHZ9115A, with a pressure range of 15 to 115 kPa, is a non-ported sensor for fuel injected car engines, motorbike and scooter engines as well as comfort seating

and lumbar applications. The MPXHZ9400AC, with a pressure range of 15 to 400 kPa, is a ported version with tube attachment for applications such as alternative fuel or hybrid/electric vehicles, liquid propane gas (LPG) and remote sensing.

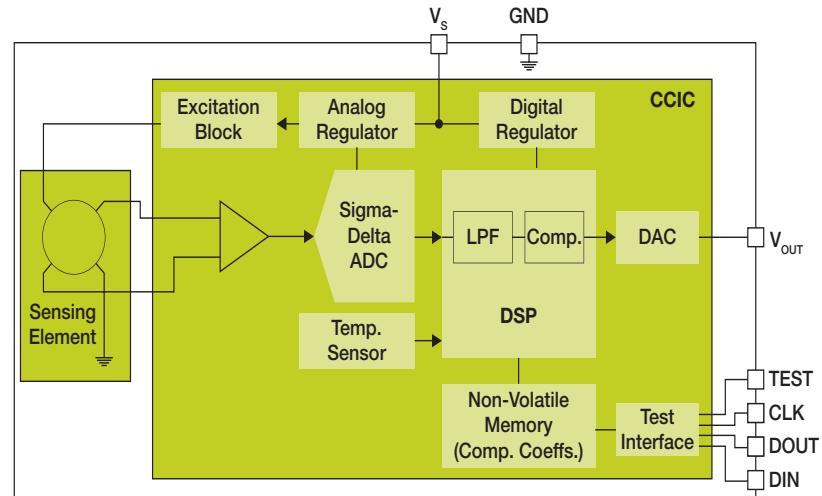
Freescale demonstrates these advantages with the Tower System pressure sensor plug-in boards (TWRPI-MPXHZ9xxx) that are compatible with the modular and expandable Tower System development platform.

Elevate your pressure sensor design to the next level.

Target Applications

- Barometric airflow pressure
- Manifold airflow pressure
- Fuel injected car engines
- Motorbike, scooter engines
- Comfort seating, lumbar support
- Autogas vehicles powered by low-emission fuels (LPG, CNG)
- Consumer applications: Altimeters, home appliances
- Industrial applications: Heating/cooling (HVAC) control
- Remote sensing
- Pressure sensor port and non-port packages available

MPXHZ9115A and MPXHZ9400AC Xtrinsic Pressure Sensors



Key Features

- Pressure range: 15 to 115 kPa
- Maximum pressure: 400 kPa
- 5 volt power supply
- 1.5% maximum error over 0 °C to 85 °C
- Temperature compensated from –40 °C to +125 °C
- Fully calibrated and compensated
- Ideally suited for MCUs or MCU-based systems
- Durable thermoplastic 8-lead surface mount package

Benefits

- Resistant to high humidity and common automotive media for extended product life
- Uses the same pin-out as existing MPXx6115x pressure sensors
- Wide pressure range to cover a variety of engine control applications
- Standard product family provides design flexibility for multiple applications
- Quality commitment per AEC-Q100 grade 1 standard
- Factory-adjustable clipping level
- Loss of supply or ground diagnostics
- Package porting and mounting options enable tube attachment for LPG or remote sensing applications

Selector Guide

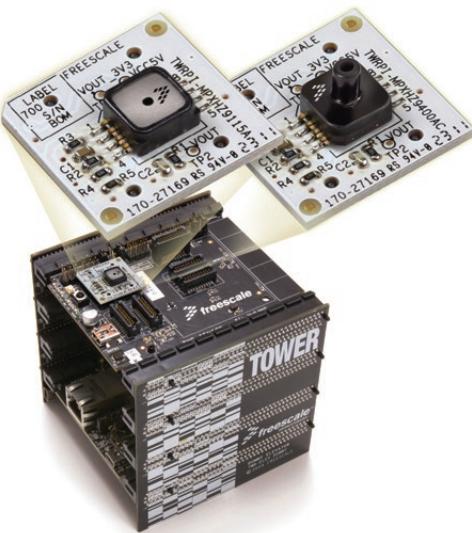
Part Number	Operating Supply (V)	Pressure Range (kPa) **	Temperature Range	Package*
MPXHZ9115A6T1	5	15–115	–40 °C to +125 °C	8-lead surface mount
MPXHZ9250A6T1	5	15–250	–40 °C to +125 °C	8-lead surface mount
MPXHZ9400A6T1	5	15–400	–40 °C to +125 °C	8-lead surface mount
MPXHZ9105A6T1	5	15–105	–40 °C to +125 °C	8-lead surface mount
MPXHZ9115AC6T1	5	15–115	–40 °C to +125 °C	8-lead surface mount with port
MPXHZ9250AC6T1	5	15–250	–40 °C to +125 °C	8-lead surface mount with port
MPXHZ9400AC6T1	5	15–400	–40 °C to +125 °C	8-lead surface mount with port

* See data sheet for exact dimensions

** Tolerances are guaranteed after the application reflow solder operation and subsequent exposure to a 24 hour, 15 kPa, 125 °C diffusion bake. See datasheet for tolerances without the post-reflow diffusion bake.

Documentation

Freescale Document Number	Title	Description
MPXHZ9000A	MPXHZ9000A Data Sheet	Presents the specifications for this product
AN3728	Media Compatibility for IPS PRT Pressure Sensors	This application note covers the term media compatibility and how it affects pressure sensors
KIT33812ECUUG	Small Engine Reference Design User Manual	This user manual outlines our complete solution for the electronic control of a small engine
TWRPI9115QSG	Quick Start Guide for TWRPI-MPXHZ9115	This quick start guide will help you use the Tower System pressure sensor board as quickly and easily as possible

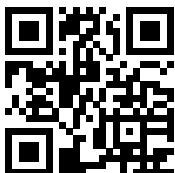


Development Tools

Kit Numbers	Description
TWRPI-MPXHZ9115	The Tower System pressure sensor plug-in boards are compatible with the modular and expandable Tower System development platform
TWRPI-MPXHZ9250	
TWRPI-MPXHZ9400	

Freescale: A Leader in Sensing Solutions

Expanding on more than 30 years of sensor innovation, our Xtrinsic sensing solutions are designed with the right combination of high-performance sensing capability, processing capacity and customizable software to help deliver smart, differentiated sensing solutions. With Xtrinsic sensors, our vision is to offer a diverse and differentiated product portfolio to meet the expanding needs of the automotive, consumer and industrial segments. Xtrinsic solutions offer ideal blends of functionality and intelligence designed to help our customers differentiate and win in highly competitive markets.



For more information, visit freescale.com/MPXHZ9000

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