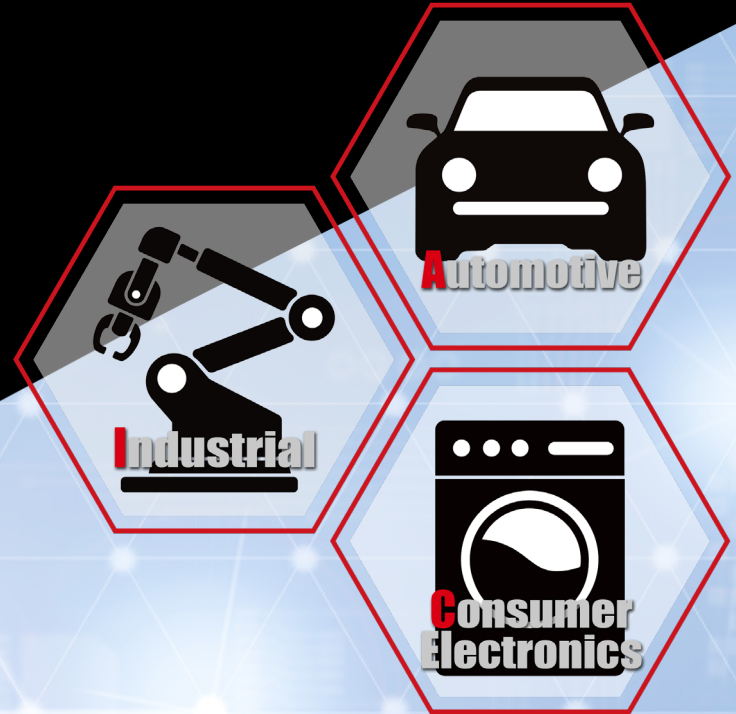


Introducing ROHM's Zero-Drift Amps

Zero-Drift Ultra-Low Offset Voltage High Accuracy Op Amps

LMR1002F-LB
LMR1001YF-C



The LMR1002F-LB and LMR1001YF-C are Zero-Drift Amps that deliver ultra-low offset voltage while reducing offset voltage fluctuations due to temperature-based changes to nearly zero.

The absence of temperature-based offset voltage variations makes these zero-drift amps ideal for applications requiring high-accuracy sensing under any conditions.

Features

- **Contributes to high accuracy sensing in a variety of applications**

Low offset voltage and low offset voltage temperature drift

LMR1002F-LB: 9 μ V (Max) offset voltage, 50nV/ $^{\circ}$ C (Max) offset voltage temperature drift

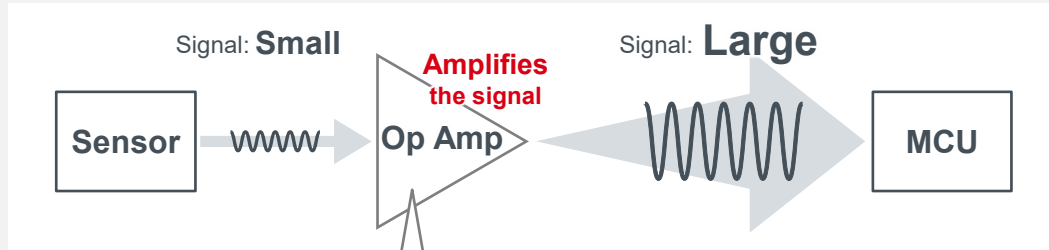
- **Reduce the burden for system design**

Enables system design without concern for variations in offset voltage caused by environmental changes



SOP8 Package
5.00×6.20×1.71mm

Signal Processing in Sensing Applications



Error Factors of Op Amps

Offset voltage:

Error voltage that appears when the input voltage is zero

Offset voltage temperature drift:

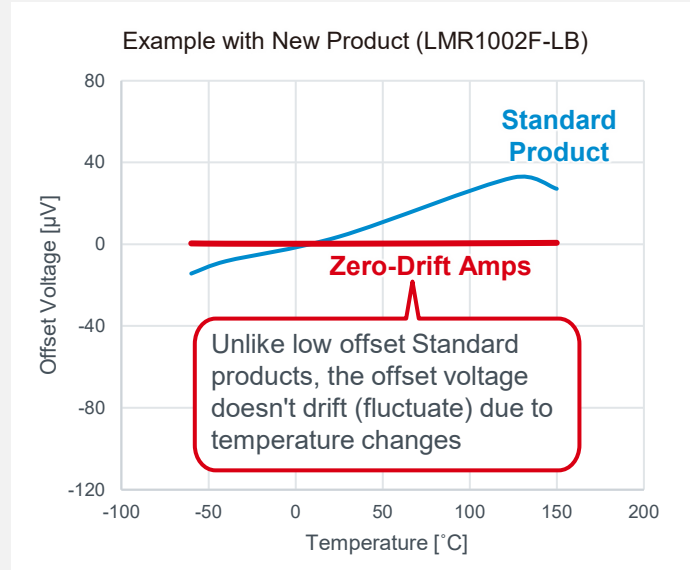
Variation in input offset voltage due to temperature changes

Amplifying these error factors with the sensor signal can decrease in sensing accuracy

The key to high accuracy sensing is minimizing op amp error factors

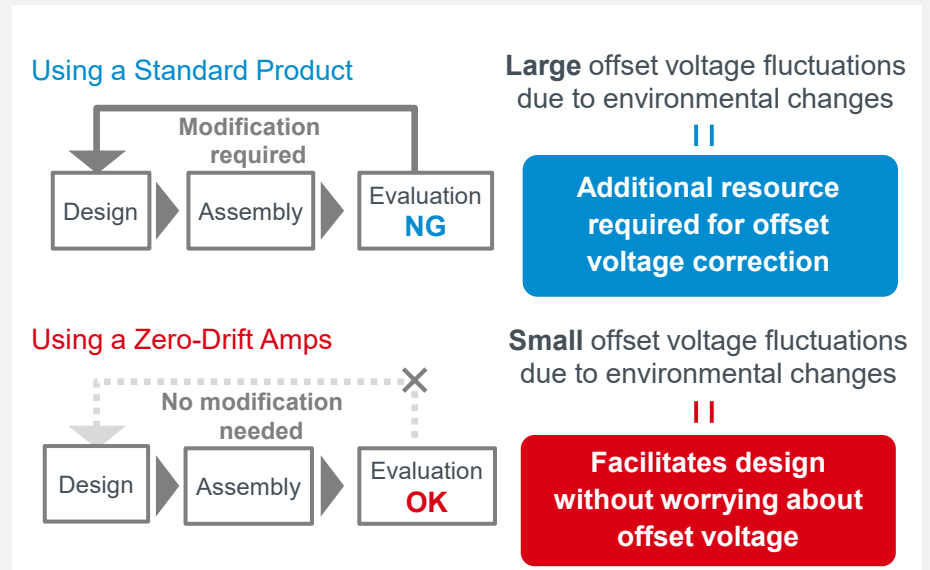
Advantages of Zero-Drift Amps

Offset Voltage Temperature Drift Comparison



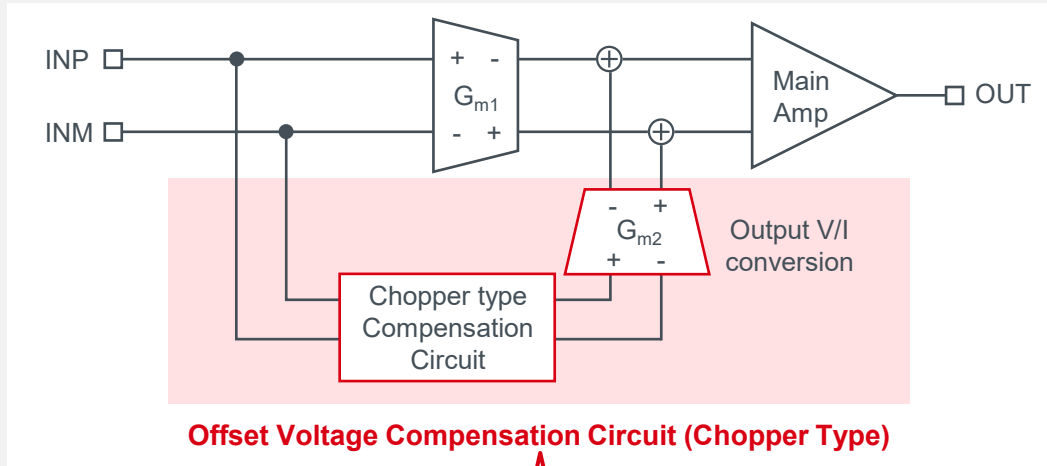
Contributes to high accuracy sensing in a variety of applications

Comparison of resource Required for System Design



Reduce the burden for system design

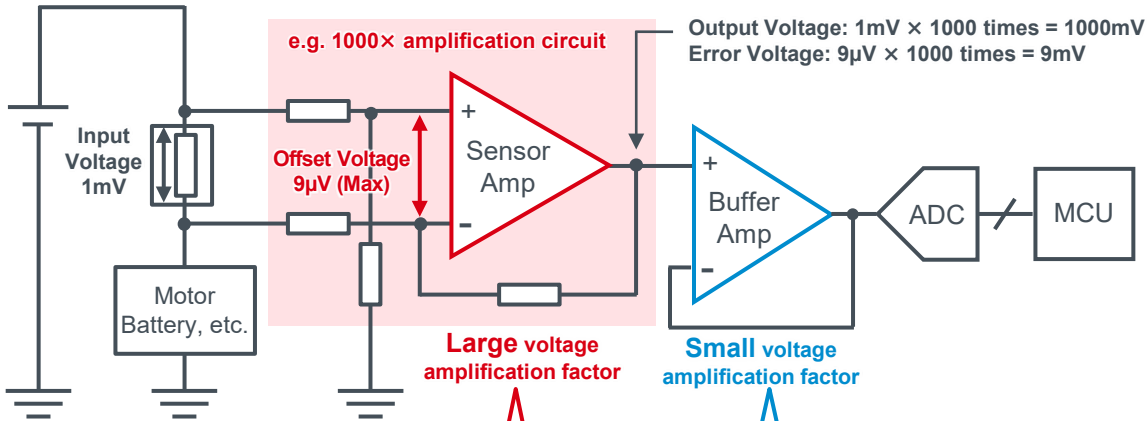
LMR1002F-LB/LMR1001YF-C Block Diagram



The offset voltage of the main amp is detected by the offset voltage compensation circuit and corrected so that the offset approaches zero

Achieves zero-drift by automatically compensating for offset voltage

For Current Detection









Zero-Drift Amps with low error voltage and high accuracy amplification are ideal

Low offset voltage op amps with a wide common-mode input range are optimal

Zero-Drift Amps are ideally suited for use as first-stage amps that amplify small voltages (e.g. sensor output, current detection)

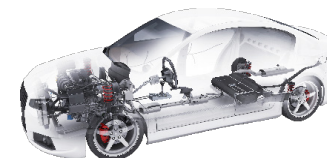
Low Offset Voltage Op Amp Lineup

Part No.	Zero-Drift Amp	ch	Supply Voltage [V]	Circuit Current [mA] (Typ)	Input Offset Voltage [μ V] (Max)	Input Offset Voltage Temperature Drift [μ V/ $^{\circ}$ C] (Max)	Operating Temperature [$^{\circ}$ C]	Input Equivalent Noise Voltage Density [n V/ \sqrt Hz] (Typ)	Package	Automotive Grade (AEC-Q100)
New LMR1002F-LB  	✓	1	2.7 to 5.5	0.85	9	0.05	-40 to +125	70	SOP8	—
New LMR1001YF-C  	✓	1	2.7 to 5.5	0.85	12	0.5	-40 to +125	70	SOP8	YES
LMR376YG-C  	—	1	2.5 to 5.5	0.85	190	2.2	-40 to +125	5.5	SSOP5	YES

Click on the  icon to access the product page on ROHM's website. Click on the  icon to access the product datasheet on ROHM's website.

Application Examples

- Industrial equipment/consumer devices** (LMR1002F-LB)
 Current-sense amps for power-controlled inverters, instrumentation sense amps for temperature/pressure/flow rate, etc.
- Automotive systems** (LMR1001YF-C)
 ECU/OBC (On-Board Charger)/BMS (Battery Management System) current sense amps, etc.



Ideal for applications requiring high-accuracy sensing

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