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Flux Gate Current & Voltage Sensor

Key Highlight

- Flux gate closed-loop sensing with magnetic interference cancellation
- Galvanic isolation for enhanced safety and system protection
- High accuracy with low offset and minimal temperature drift

Production Information

The Flux Gate Current & Voltage Sensor (iFGC) is a precision sensing solution developed for high-reliability automotive and power applications. Based on flux gate technology, the sensor accurately measures current flow while actively canceling external magnetic interference through a closed-loop feedback mechanism.

This feedback-controlled magnetic field adjustment ensures precise and stable measurements, even in electrically noisy environments. The iFGC supports both AC and DC current measurement, making it suitable for advanced power management systems in electric vehicles, renewable energy platforms, and industrial power systems.

With galvanic isolation, the sensor provides enhanced safety and system protection. Its low offset, minimal offset drift, and low temperature drift characteristics enable high accuracy, especially when measuring small residual currents. This makes it ideal for applications such as battery State of Charge (SoC) and State of Life (SoL) estimation, as well as motor current monitoring.

The sensor operates on a 5V supply, supports 12V vehicle systems, and functions reliably across a wide temperature range from -40°C to 125°C. Rated primary current measurement ranges from 50 to 100 ADC and can be customized based on application requirements.

Designed for OEM integration, the iFGC platform is PPAP ready and offers flexible output configurations including unipolar analog voltage, bipolar output, PWM, or CAN. Form factor, connector type, and voltage levels can also be tailored to specific customer needs

Technical Specifications

Sensing Technology	Flux Gate (Closed-Loop with Magnetic Feedback)
Function	High-accuracy AC and DC current measurement with interference cancellation
Vehicle System Voltage	12V / 24V
Operating Supply Voltage	5V
Supply Current	30 mA max
Sensing Air Gap	0.5 to 2 mm
Operating Frequency Range	0 to 15 kHz
Operating Temperature	-40°C to 125°C
Rated Primary Measurement Current	50 to 100 ADC (Customizable)
Output Type	Unipolar Analog Voltage (Customizable – Bipolar / PWM / CAN)
Isolation	Galvanic Isolation
Development Status	Proof of Concept (POC) Complete, PPAP ready