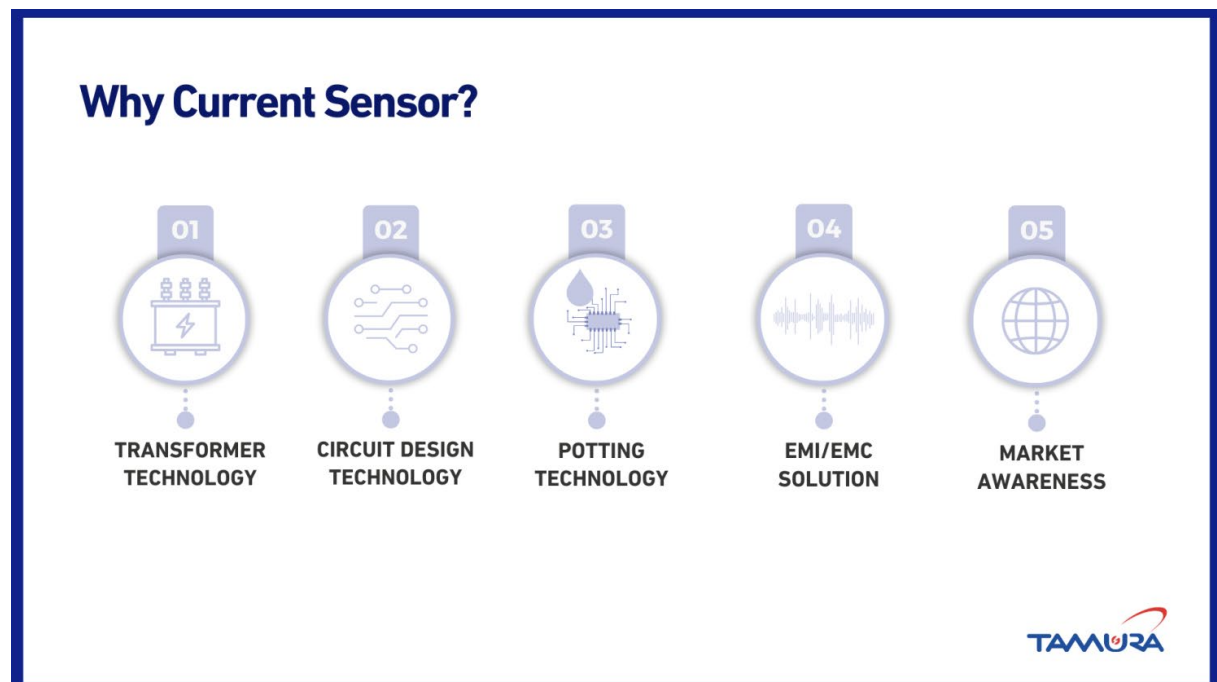




Tamura Current Sensors: Precision, Innovation, and Reliability

Tamura Corporation: A Legacy of Excellence in Current Sensing

Since its founding in 1924, Tamura Corporation has been a pioneer in electronic component innovation, entering the current sensor market in 1956, specializing in high-performance current sensors for industrial, automotive, and energy applications. With cutting-edge technology and a commitment to precision, our sensors offer superior accuracy, reliability, and efficiency in power electronics.



Advanced Technologies Behind Tamura Current Sensors

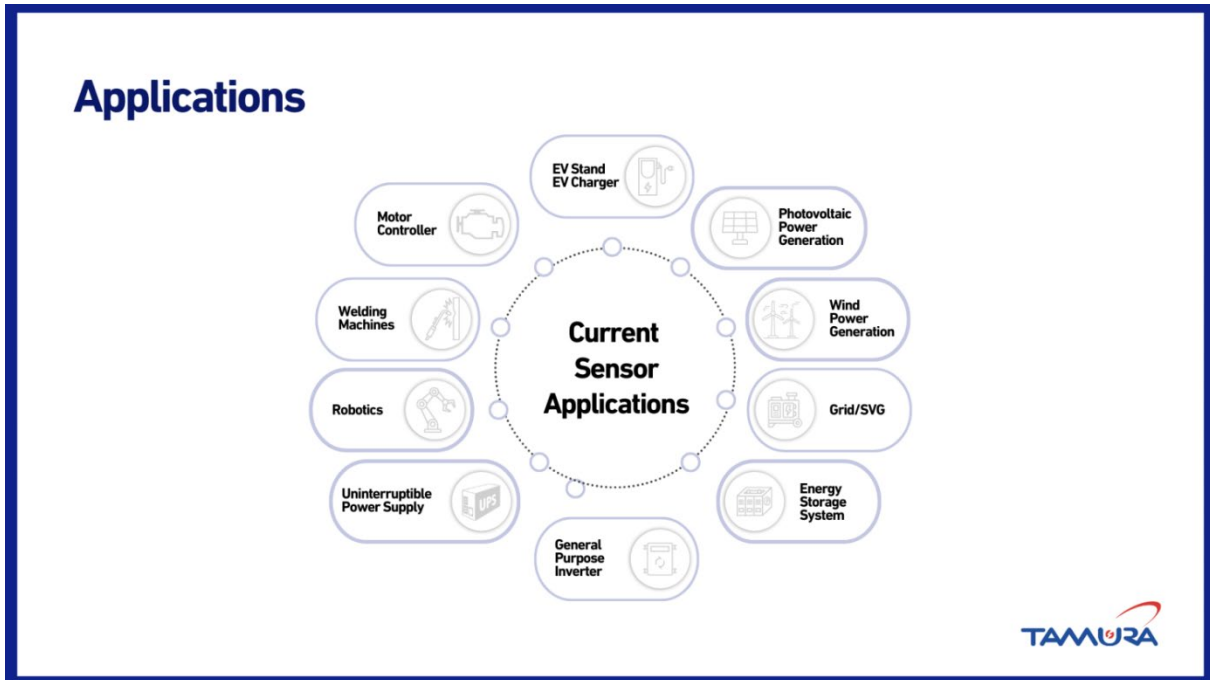
Tamura integrates multiple technological advancements to ensure optimal sensor performance:

- **Transformer Technology:** High-precision sensing utilizing electromagnetic principles.
- **Circuit Design Technology:** Optimized designs for improved efficiency and reduced power loss.
- **Potting Technology:** Enhanced durability and protection against environmental factors.
- **EMI/EMC Solutions:** Minimization of electromagnetic interference for stable operation.
- **Market Awareness:** Tailored solutions addressing industry-specific needs.



Singel 3 | B-2550 Kontich | Belgium | Tel.+32(0)3 458 30 33
 info@alcom.be | www.alcom.be
 Rivium 1e straat 52 | 2909 LE Capelle aan den IJssel | The Netherlands
 Tel.+31(0)10 288 25 00 | info@alcom.nl | www.alcom.nl

Applications of Tamura Current Sensors



Tamura's sensors are designed for a wide range of industries, ensuring precision and reliability in diverse applications:

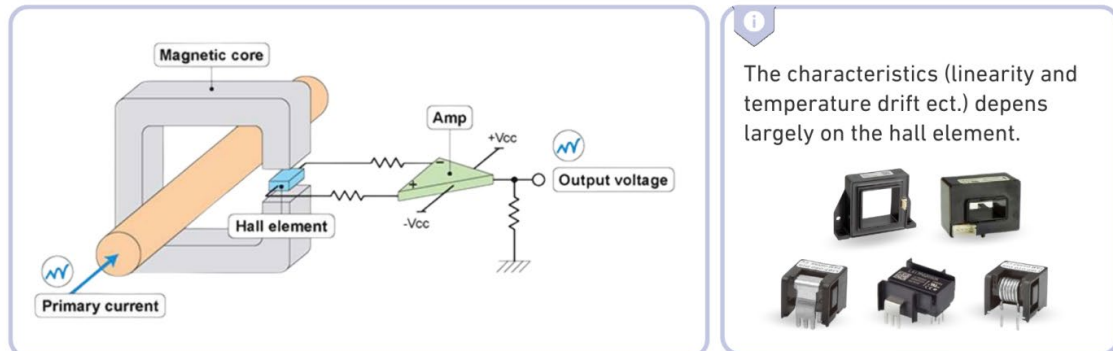
- **Robotics:** High-precision motion control and feedback systems.
- **UPS (Uninterruptible Power Supply):** Ensuring stable power distribution and monitoring.
- **Photovoltaic Power Generation:** Efficient energy conversion and grid integration.
- **Wind Power Generation:** Monitoring and optimizing wind turbine performance.
- **Energy Storage Systems:** Managing energy flow for enhanced efficiency.
- **Motor Controllers:** Improving efficiency and accuracy in industrial motors.
- **Welding Machines:** Precise current measurement for high-quality welding processes.
- **Grid & SVG (Static Var Generator) Systems:** Optimizing power factor correction and grid stability.
- **General-Purpose Inverters:** Supporting industrial and commercial power applications.
- **EV Charging Stations & Energy Storage:** Enabling safe and efficient power management in electric vehicle infrastructure.

Understanding Open-Loop and Closed-Loop Current Sensors

Tamura's product lineup includes both open-loop and closed-loop current sensors, each designed to meet specific application requirements.

Open-Loop Current Sensors

Open Loop operation principle



TAMURA

Open-loop current sensors use Hall effect technology to measure current flow. These sensors provide a cost-effective solution with lower power consumption, making them ideal for general-purpose inverters, motor controllers, and energy storage systems.

- **Operation Principle:**

1. The sensor detects the magnetic field generated by the current.
2. The characteristics such as linearity and temperature drift depend on the Hall element.

- **Product Lineup (Open-Type, Dual Supply):**

L55S, L51S, L40S, L34S, L07PL18P, L08P, L37S

- **Product Lineup (Open-Type, Single Supply):**

L51S, L01Z, L34S, L07PL18P, L32PL31S

Product lineup Open type (Single Supply)

Single Supply 5V

L01Z***S05 (50A - 600A)
 L06P***S05 (300A - 800A)
 L07P***S05 (5A - 30A)
 L18P***S05 (3A - 60A)
 L31S***S05 (50 - 600A)
 L32P***S05 (50 - 400A)

Single Supply 12V

L18P***S12 (3A - 60A)

Single Supply 15V

L05Z800S15 (800A)

L51S



L31S



L01Z



L18P



L07P



L32P



L34S



Product lineup Open type (Dual Supply)

Dual Supply +/- 15V

L03S***D15 (50A - 600A)
 L07P***D15 (3A - 25A)
 L08P***D15 (50A - 500A)
 L18P***D15 (3A - 60A)
 L34S***D15 (200 - 1500A)
 L37S***D15 (50A - 600A)
 L37P***D15 (50A - 600A)
 L40S***D15 (200A - 1500A)
 L51S***D15 (500A - 2500A)
 L55S***D15 (1500A-2500A)

L51S



L40S



L08P



L55S



L07P



L18P



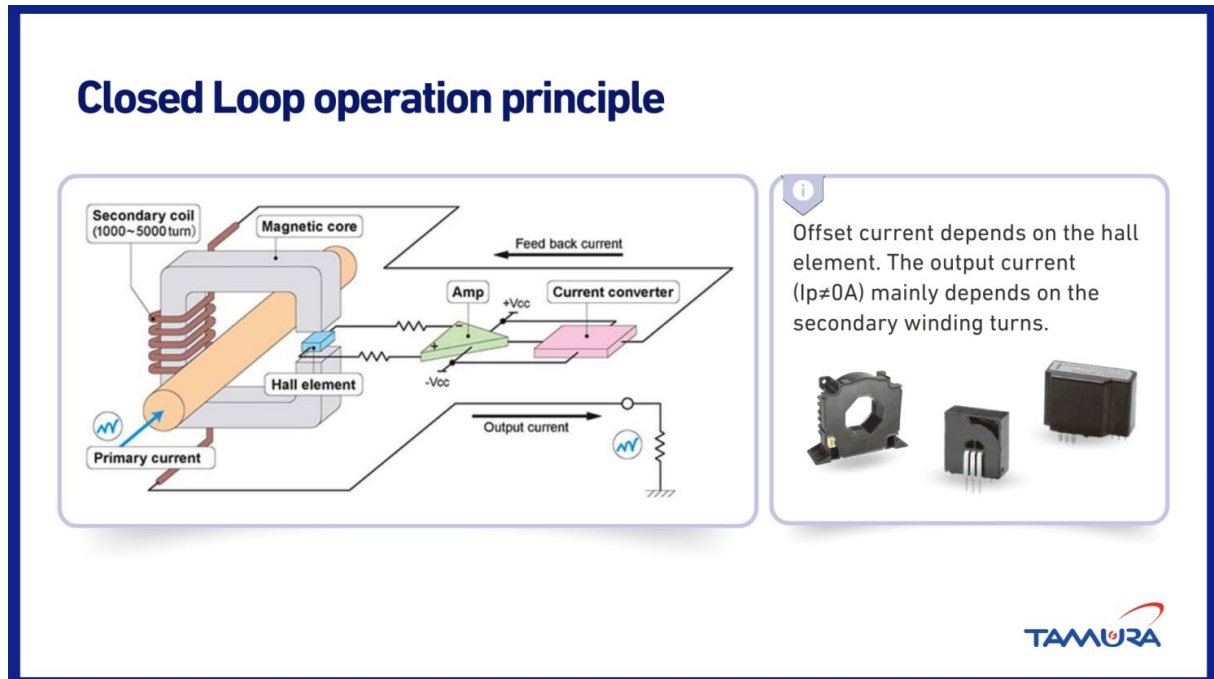
L37S



L34S



Closed-Loop Current Sensors



Closed-loop sensors provide higher accuracy and faster response times compared to open-loop models. These sensors use a feedback mechanism to enhance measurement precision, making them suitable for applications demanding superior accuracy, such as robotics, uninterruptible power supplies (UPS), and high-performance motor controllers.

- **Closed-Loop (Hall Effect) Operation Principle:**

1. The output current is proportional to the measured current.
2. Offset current depends on the Hall element, and accuracy is improved with secondary winding turns.

- **Product Lineup (Closed-Loop, Hall Effect):**

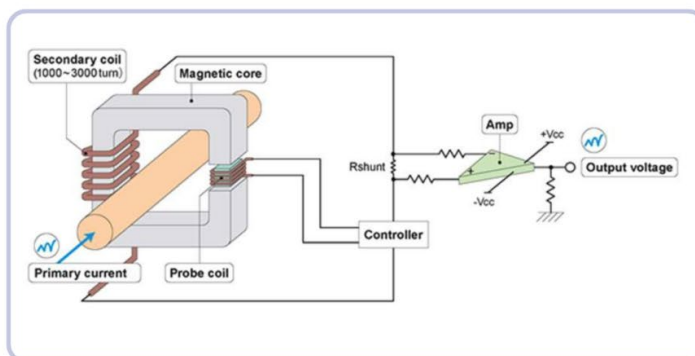
S21S, S20S, S23P, L37S, S29S, S30S, S27S, S22P

Product lineup Closed loop type (Hall Effect)

<u>Dual Supply +/- 15V, +/- 24V</u> S20S***D15 (200A) S21S***D15 (180A) S23P***D15 (50A - 100A) S27S***D15 (300A) S28S***D24 (500A) S29S***D24 (1000A) S30S***D24 (2000A) S42S***D24 (1000A)	L37S	L37S		
	S21S	S29S		
	S20S	S22P	S23P	S27S

Closed-Loop (Fluxgate) Current Sensors

Closed Loop (Fluxgate) operation principle



Fluxgate CS replaces the Hall element with probe coil made of highly saturable material. To achieve very high accuracy and temperature stable output.



Fluxgate current sensors replace the Hall element with a highly saturable probe coil, delivering ultra-high accuracy and stable temperature output. These sensors are designed for critical applications in power grids, electric vehicle charging stations, and high-precision welding systems.

- **Operation Principle:**

1. Uses a probe coil instead of a Hall element to minimize offset errors.
2. Achieves extremely high accuracy and temperature stability.

- **Product Lineup (Closed-Loop, Fluxgate):** F23P, F26P, 150S12, F01P, F02P, F03P

Product lineup Closed loop type (Fluxgate)

Single Supply 5V

F01P***S05L (6A / 15A / 25A / 50A)
 F02P***S05L (6A / 15A / 25A / 50A)
 F03P***S05L (6A / 15A / 25A / 50A)
 F23P***S05R (50A / 100A)
 F26P***S05(B) (50A / 100A / 150A)

Single Supply 12V

F26P150S12 (150A)

F01P



F02P



F23P



F03P



F26P



F26P
150S12



Tamura's Commitment to Innovation

Tamura Corporation continues to push the boundaries of current sensing technology through dedicated research and development. Our products are designed to meet the evolving demands of modern industries, ensuring reliability, efficiency, and performance in power electronics.