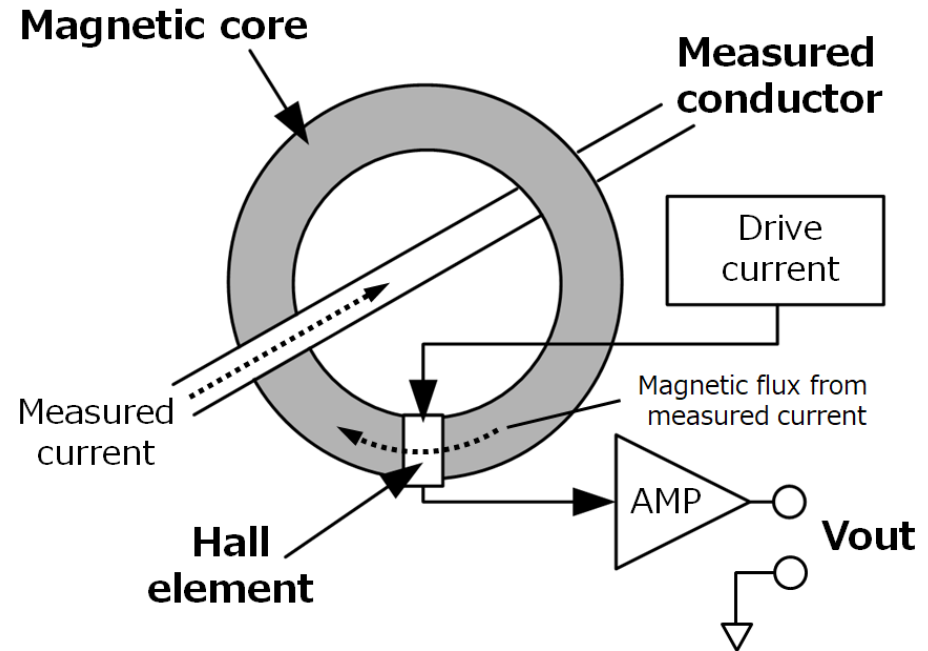


Details of Current Sensors by Operating Principle

② Hall Element Method (AC/DC)

Characteristics

- Measure DC to AC (<10 kHz)
- Affordable
- Lacks precision due to the linearity of the Hall element and the $B-H$ characteristics of the magnetic core
- Not suited for long-term measurement due to drifting caused by humidity and change over time which is a characteristic caused by the Hall element



Measurement Principle

- When the measured current (principle current) passes through the magnetic core's aperture, a magnetic flux is induced in the core. As this magnetic flux flows through the Hall element, a voltage generates in proportion to the magnetic flux. This voltage induction is known as the Hall effect.
- Since the voltage induced by the Hall effect is small, it is boosted with an amplifier before being output.
- The output voltage which is proportional to the measured current allows for current measurement.

Hioki Hall Element (AC/DC) Sensors

CT7631, CT7636, CT7642, CT7731, CT7736, CT7742