High Side Current Sense Measurement Circuits And

High-side current sensing is often used where a high DPI (device power input) is required, and it is essential to measure the current accurately. High-side current sensors are commonly used in automotive, industrial, and telecom applications. They are particularly useful in situations where the current flows from a high-voltage source.

In high-side current sensing, the current flows from a high-voltage source to a low-voltage sink. This type of measurement is often used in power supplies, battery chargers, and other applications where the current flows from a high-voltage source.

There are two main types of high-side current sensors:

1. Current Transformers (CTs)
2. High-side current sensors

Current Transformers (CTs)

Current transformers are the most common type of current sensor. They are used to measure the current flowing in a high-voltage circuit. The transformer is connected in series with the circuit, and the secondary winding of the transformer is connected to the current measurement circuit. The voltage across the secondary winding is proportional to the current flowing in the primary winding.

High-side Current Sensors

High-side current sensors are specifically designed to measure high-side currents. They are more accurate and have better linearity compared to current transformers. High-side current sensors are available in different types, such as Hall-effect sensors, current transformers, and optical current sensors.

Hall-effect sensors are a popular choice for high-side current sensing due to their high accuracy and low power consumption. They are non-contact sensors and are immune to electromagnetic interference.

In addition to the high-side current sensors, there are also high-side current monitors that are designed to monitor the current flow in high-voltage circuits. These sensors can provide real-time monitoring and alarming in case of overcurrent or short-circuit conditions.

Conclusion

High-side current sensing is a common practice in various industries. It is essential to use the right type of current sensor to ensure accurate measurement and to prevent damage to the equipment. By choosing the right type of current sensor, one can ensure that the current is measured accurately and safely.