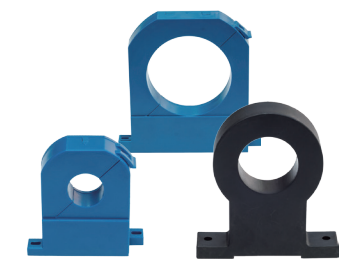


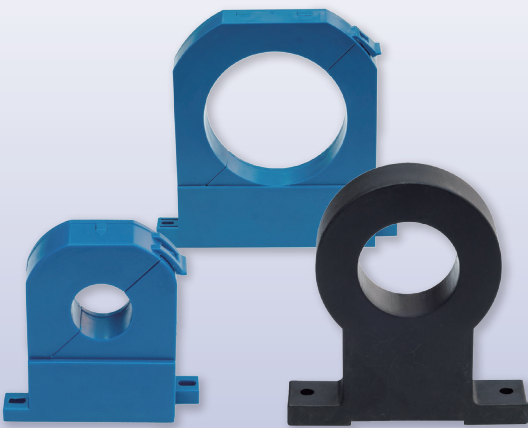
# Current measurement

Leakage current sensor



P.161 [▶](#)

# Leakage current sensor



Leakage Current Sensor is a closed-loop low current sensor based on the principle of flux gate and adopting magnetic modulation technology. It can be divided into DC leakage current and AC leakage current. It has good stability in measuring low current and has high insulation value between primary and secondary.

It is widely applied to insulation leakage inspection and current inspection of signal control system in power grid and power plants, as well as other applications requiring current difference measurement. It is adopted in power plants, substations and all industrial enterprises that use DC control system, such as electric power, chemical industry, telecommunication, railway and other departments that have requirements for the safe operation of DC system, to perform monitoring the ground leakage current state of DC system, especially the monitoring of the low current state in the ground leakage current by DC system, eliminate the ground fault of DC system timely and precision, and eliminate the hidden trouble of DC system grounding in advance to avoid the harm caused by the simultaneous grounding of two points.

Inquiry Soway

86-0755-88367005  
soway@sowaysensor.com



Data download

www.sowaysensor.com/product/

Good linearity and strong anti-interference capability

Has the functions of power down protection and power polarity protection, etc.

Excellent heat dissipation and insulation performance

## Application area



Electric power industry



Solar energy industry

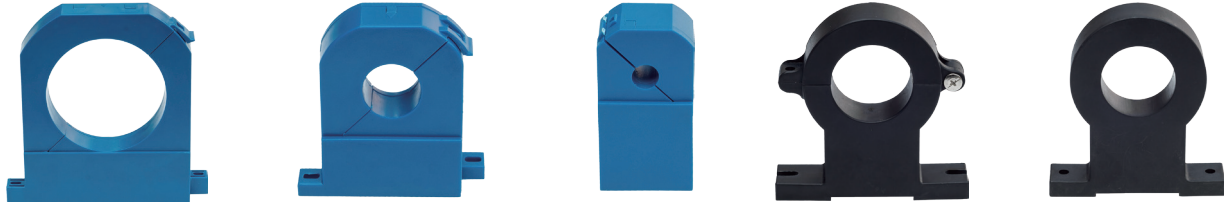


New energy industry



Industrial automation industry

## Product example



It is widely applied to insulation leakage inspection and current inspection of signal control system in power grid and power plants, as well as other applications requiring current difference measurement.

## Basic performance parameter

| Model                                   | SCMH08                      | SCMH19   | SCMH33   | SCMH60   | SCMH94   | SCMH20B  | SCMH40B  | Unit  |       |    |
|---|-----------------------------|----------|----------|----------|----------|----------|----------|-------|-------|----|
| Maximum diameter                        | 6                           | 18       | 30       | 58       | 90       | 18       | 38       | mm    |       |    |
| Outline structure drawing               | Figure 1                    | Figure 2 | Figure 3 | Figure 4 | Figure 5 | Figure 6 | Figure 7 |       |       |    |
| Product structure class                 | Opening                     |          |          |          |          | Close    |          |       |       |    |
| Measured current type                   | DC and AC                   |          |          |          |          |          |          |       |       |    |
| Rating value of measured $I_{PN}$       | 10                          | 20       | 50       | 100      | 200      | 500      | 1000     | 2000  | 3000  | mA |
| Maximum value of measured current $I_p$ | ±20                         | ±50      | ±100     | ±200     | ±400     | ±800     | ±800     | ±3000 | ±5000 | mA |
| Output signal                           | DC±5V、DC±5V or 4-20mA (±1%) |          |          |          |          |          |          |       | V     |    |
| Supply voltage $V_{CC}$                 | DC±12V or DC24V(±5%)        |          |          |          |          |          |          |       | V     |    |
| Current consumption $I_C$               | <20                         |          |          |          |          |          |          |       | mA    |    |
| Load resistance $R_L$                   | ≥10K                        |          |          |          |          |          |          |       | Ω     |    |
| Linearity $\varepsilon_L$               | ≤±1%                        |          |          |          |          |          |          |       | FS    |    |
| Zero offset voltage $V_{OL}$            | ≤±50 ( TA =25℃ )            |          |          |          |          |          |          |       | mV    |    |
| Zero offset temperature drift $V_{OT}$  | ≤±2 ( IP=0 TA =-10 ~ +60℃ ) |          |          |          |          |          |          |       | mV/℃  |    |
| Insulation voltage $V_D$                | 2.5KV /50Hz/1min            |          |          |          |          |          |          |       | /     |    |
| Operating ambient temperature $T_A$     | -25 ~ +70 ℃                 |          |          |          |          |          |          |       | ℃     |    |
| Storage ambient temperature $T_S$       | -40 ~ +85 ℃                 |          |          |          |          |          |          |       | ℃     |    |

Note 1: the maximum rated measured current of the three series is 1000 mA

- Position detection
- Angle measurement
- Speed measurement
- Displacement measurement
- Liquid level measurement
- Flow measurement
- Pressure measurement
- Temperature and humidity measurement
- Current measurement
- Special sensor

Current sensor



|                                      |
|--------------------------------------|
| Position detection                   |
| Angle measurement                    |
| Speed measurement                    |
| Displacement measurement             |
| Liquid level measurement             |
| Flow measurement                     |
| Pressure measurement                 |
| Temperature and humidity measurement |
| Current measurement                  |
| Special sensor                       |

Machine dimensions

Figure 1-SCMH08 structural dimensions:

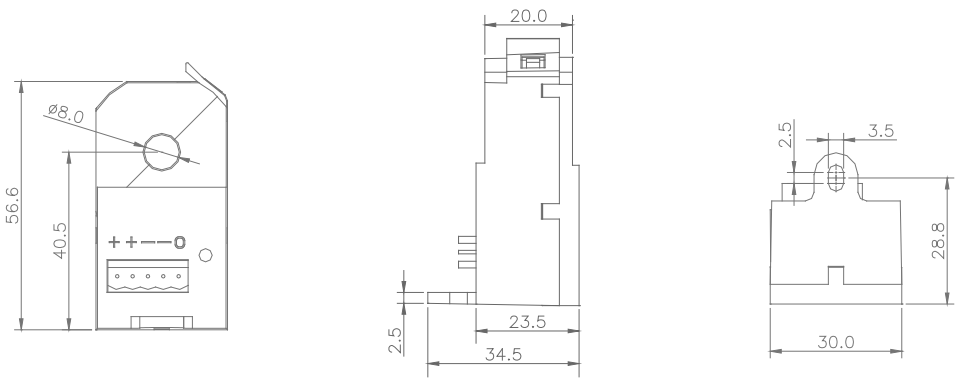
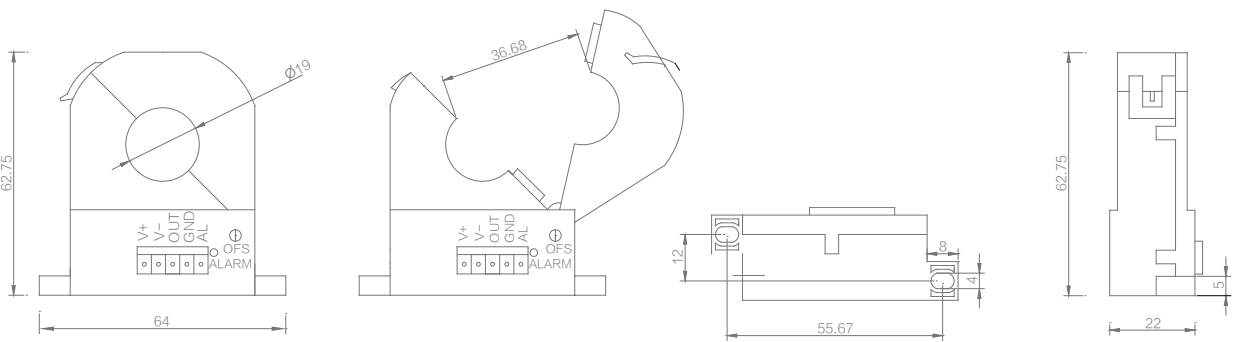


Figure 2-SCMH19 structural dimensions:



| Functional base pin description | V+                    | V-                    | OUT           | GNDt | AL                     | ALARM                | OFS             |
|---------------------------------|-----------------------|-----------------------|---------------|------|------------------------|----------------------|-----------------|
|                                 | Positive power supply | Negative power supply | Signal output | GND  | Alarm control terminal | Alarm indication LED | Zero adjustment |

Figure 3-SCMH33 structural dimensions:

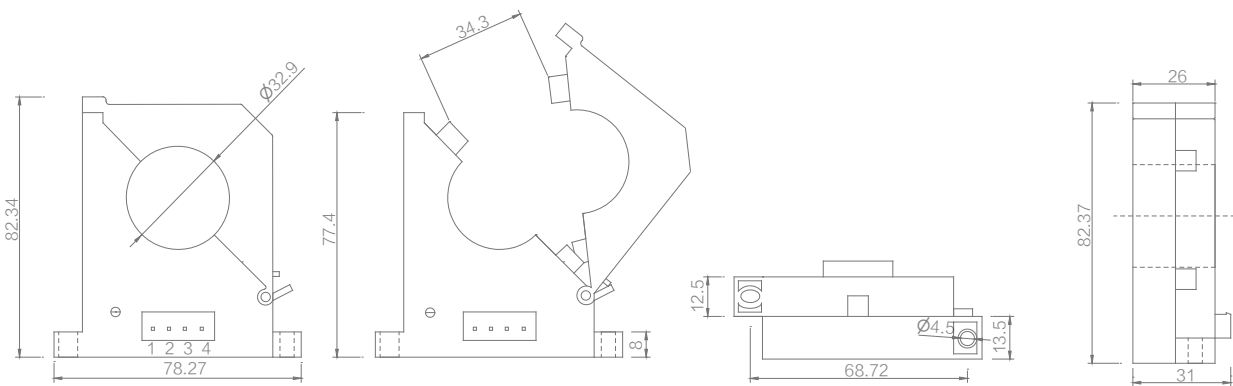
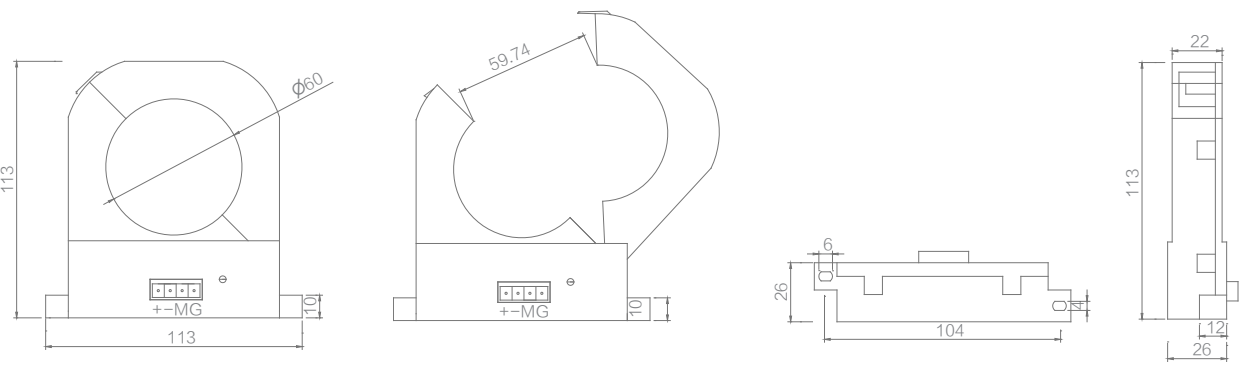
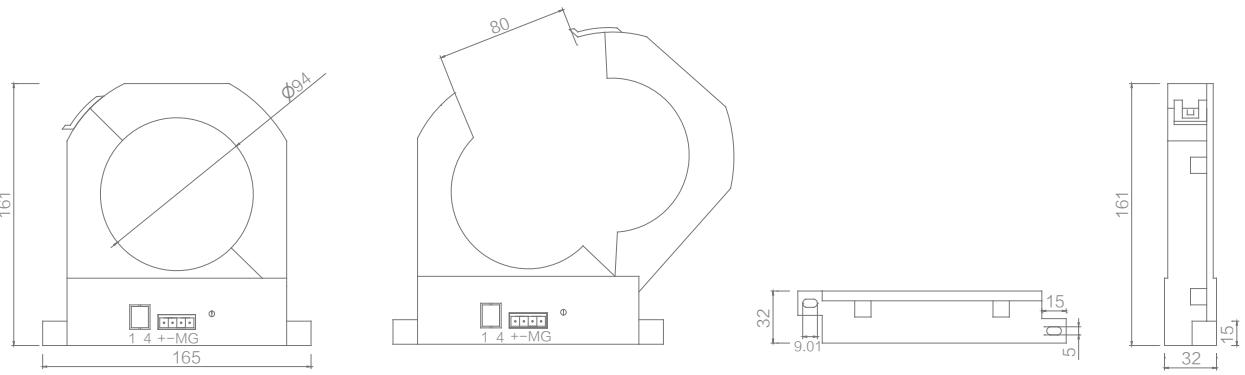


Figure 4-SCMH60 structural dimensions:



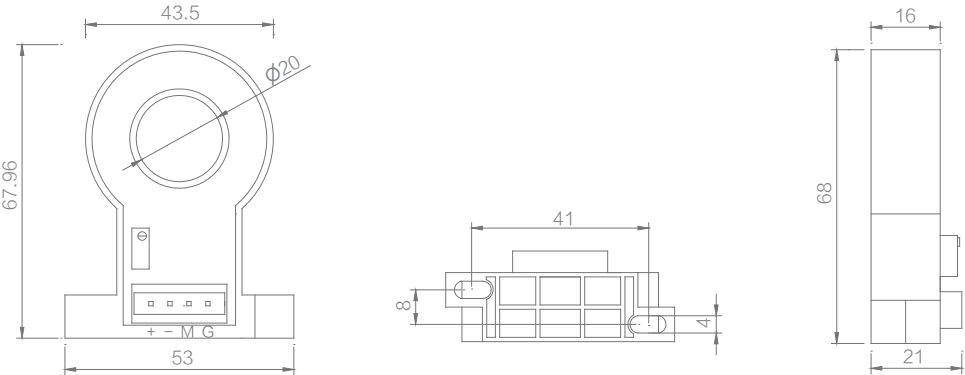
| Pin note | +                     | -                     | M             | G              |
|----------|-----------------------|-----------------------|---------------|----------------|
|          | Positive power supply | Negative power supply | Signal output | Grounding port |

Figure 5-SCMH94 structural dimensions:



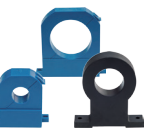
| Pin note | +                     | -                     | M             | G              |
|----------|-----------------------|-----------------------|---------------|----------------|
|          | Positive power supply | Negative power supply | Signal output | Grounding port |

Figure 6-SCMH20B structural dimensions:



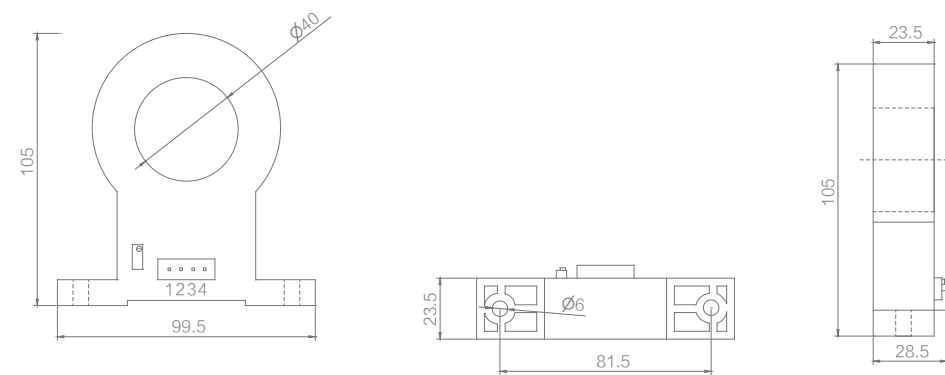
|                                      |
|--------------------------------------|
| Position detection                   |
| Angle measurement                    |
| Speed measurement                    |
| Displacement measurement             |
| Liquid level measurement             |
| Flow measurement                     |
| Pressure measurement                 |
| Temperature and humidity measurement |
| Current measurement                  |
| Special sensor                       |

Current sensor



|                                      |
|--------------------------------------|
| Position detection                   |
| Angle measurement                    |
| Speed measurement                    |
| Displacement measurement             |
| Liquid level measurement             |
| Flow measurement                     |
| Pressure measurement                 |
| Temperature and humidity measurement |
| <b>Current measurement</b>           |
| Special sensor                       |

Figure 7-SCMH40B structural dimensions:



|          |            |            |               |                |
|----------|------------|------------|---------------|----------------|
| Pin note | +          | -          | M             | G              |
|          | +12V Power | -12V Power | Signal output | Grounding port |

## Wiring method

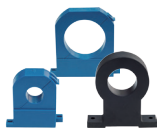
### Pin description

200mil spacing terminal: 1:+ (VCC) 2:- (VCC) 3: M (Vout) 4: G (GND) OFS: zero adjustment

4 PRJ11 crystal head: 1: + (VCC) 2: G (GND) 3: M (Vout) 4: - (VCC) OFS: zero adjustment

## Instructions for use

1. Wrong wiring may cause damage to the sensor. After the sensor is power up, when the measured current passes through in the direction of the sensor arrow, the in-phase voltage value can be measured at the output end.
2. The output amplitude of the transducer can be adjusted according to the user's requirements.



## Product selection list

|    |                      |   |                        |   |                     |                            |                                |   |                               |   |                         |
|----|----------------------|---|------------------------|---|---------------------|----------------------------|--------------------------------|---|-------------------------------|---|-------------------------|
| SC | □                    | □□□   | □□                     | — | □□□□□               | □                          | □                              | — | □□□□□                         | — | □□□□                    |
|    | Type                 | Aperture  | Structure              |   | Measuring range [1] | Measuring current type     | Measurement mode [2]           |   | Rated output signal value [3] |   | Working power supply    |
|    | Working power supply | H: round hole through orifice dimension<br>S: square hole length dimension<br>The dimension of the hole corresponding to the number at the back of the letter, and the unit is mm | K: Opening<br>B: Close |   |                     | D: DC<br>A: AC<br>C: AC/DC | K: open loop<br>B: closed loop |   |                               |   | Default:±12V<br>S: +24V |

Note [1]: for the measurement range, the unit is mA, up to five digits. When the value is an integral multiple of thousand, K is adopted to substitute it, e. g., 3000 mA is expressed as 3KmA and 3000 A is expressed as 3KA;

Note [2]: it is only effective for Hall current sensor;

Note [3] : for rated output signal value, it is up to four digits, the first letter is A and V, followed by number, when the number exceeds 1 digit, for the corresponding current and voltage value, the units are mA and 100 mV respectively.

# Memorandum