

# Hall effect Current Sensor

Q/SC 003 2010

## SCK13



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### Product description

#### Features

- Based on Hall effect measurement principle, open loop circuit mode.
- The isolation voltage between primary and secondary is greater than 3000VAC.
- Comply with UL94-V0 flame retardant rating.

#### Performance

- It can measure DC, AC, pulse, and various irregular waveform currents of cable conductors under isolation conditions.
- Wide measurement range, fast response speed, low zero drift, low temperature drift, high accuracy and good linearity.
- Dynamic performance (di/dt and response time) is optimal when the busbar is fully filled with primary perforations.
- Strong ability to resist external electromagnetic interference (BCI, EFT, CS, CE, ESD, dv/dt, etc.).

#### Application

- It can be widely used in inverters, UPS, photovoltaic inverters, electric vehicle drives, high-frequency power supplies, inverter welding machines and other products.

#### Implementation standards

- GB/T 7665-2005
- JB/T 7490-2007
- JB/T 25480-2010
- JB/T 9473-2020
- SJ 20792-2000

#### Certification



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## Technical Parameters

| Model                                                               | SCK13T- |       |        |        |        |        |        |
|---------------------------------------------------------------------|---------|-------|--------|--------|--------|--------|--------|
| Parameters (25℃)                                                    | 200A    | 300A  | 500A   | 800A   | 1000A  | 1500A  | 2000A  |
| Primary Current (A) $I_{PN}$                                        | 200A    | 300A  | 500A   | 800A   | 1000A  | 1500A  | 2000A  |
| Primary Current Max. Peak Value (A) $I_{PM}$                        | ±600A   | ±900A | ±1500A | ±2400A | ±2400A | ±2400A | ±2400A |
| Output voltage (V)<br>$V_{out}$ @ $\pm I_{PN}$ ,<br>$R_L=10K\Omega$ | ±4V±1%  |       |        |        |        |        |        |

## Electrical Data

| Item                                                                        | Min.  | Typical | Max.  | Unit       |
|-----------------------------------------------------------------------------|-------|---------|-------|------------|
| Input power supply voltage range $V_c$<br>(±5%) (Remark 1, Remark 2)        | ±11   | ±15     | ±18   | $V_{DC}$   |
| Current consumption $I_c$                                                   | -     | ±15     | ±20   | mA         |
| Withstand resistance $R_{INS}$ @500V DC                                     | 1000  | -       | -     | $M\Omega$  |
| Output voltage $V_{out}$ @ $I_{PN}$ ,<br>$R_L=10K\Omega$ , $T_A=25^\circ C$ | 3.960 | 4.000   | 4.040 | V          |
| Output internal resistance $R_{OUT}$                                        | -     | 102     | -     | $\Omega$   |
| Load Resistance $R_L$ (Remark 3)                                            | 1     | 10      | -     | $K\Omega$  |
| Accuracy X @ $I_{PN}$ , $T_A=25^\circ C$                                    | -     | ±1      | -     | %          |
| Linearity $\varepsilon_L$ @ $R_L=10K\Omega$ , $T_A=25^\circ C$              | -     | ±0.5    | -     | % $I_{PN}$ |
| Offset voltage $V_{OE}$ @ $T_A=25^\circ C$                                  | -     | ±10     | ±20   | mV         |
| Hysteresis voltage $V_{OM}$ @ $I_{PN} \rightarrow 0$                        | -     | ±10     | ±20   | mV         |
| Temperature Coefficient of Offset Voltage $TCV_{OE}$                        | -     | ±0.5    | ±1    | mV/°C      |
| Output voltage temperature coefficient $TCV_{out}$                          | -     | ±0.05   | ±0.1  | %/°C       |
| Response time $t_D$ @ $0 \rightarrow I_{PN}$                                | -     | 3       | 5     | us         |
| Ambient operating temperature $T_A$                                         | -40   | 25      | 125   | °C         |
| Ambient storage temperature $T_s$                                           | -40   | 25      | 125   | °C         |
| Withstand voltage<br>$V_D$ @50Hz,60s,0.1mA                                  |       | 3000    |       | $V_{AC}$   |
| Weight m                                                                    |       | 230     |       | g          |

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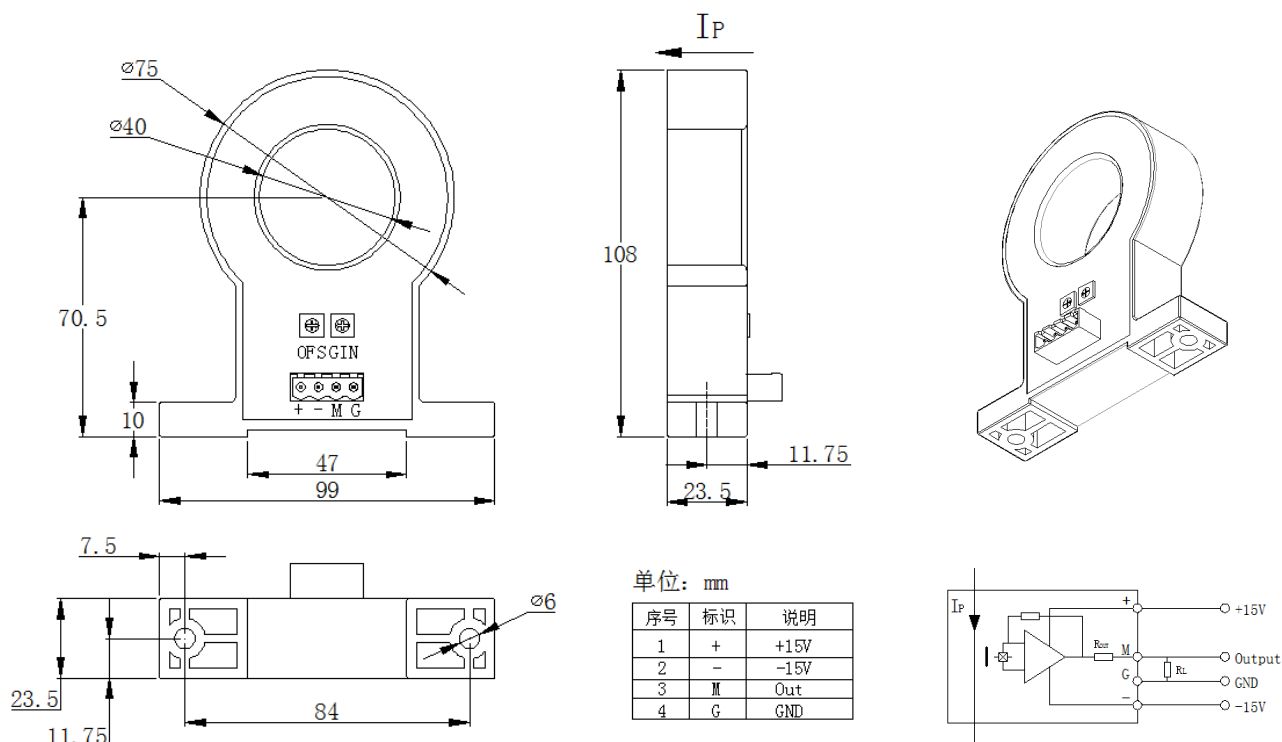
Remarks:

1. VC is less than the minimum value, which will lead to inaccurate measurement, VC is greater than the maximum value, which may cause permanent failure of the measurement device.
2. When  $\pm 12V < VC < \pm 15V$ , the measurement range will be reduced.

$$3. V_{OUT} = 4.04 * \frac{R_L}{102 + R_L} * \frac{I_P}{I_{PN}} + V_{OE}$$

4. Follow the speed  $di/dt > 50A/uS$

## Dimensions (in mm)



Notes:

1. Size error:  $\pm 1mm$ ;
2. Primary aperture:  $\phi 40mm$ ;
3. Fastening hole:  $\phi 6mm \times 2$ ;
4. Output terminal: 2EDGVC-5.08-4P;  
Mating plug: 2EDGK-5.08-4P;
5. The IP indication direction is the positive direction of the current, OFS is the zero adjustment, and GIN is the output regulation;
6. The temperature of the primary conductor shall not exceed  $105^{\circ}C$ ;
7. Incorrect wiring may cause damage to the sensor.

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