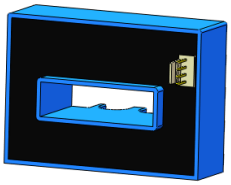
Hall effect Open-loop current sensor

SCK4



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

- Can measure DC, AC, pulse, and various irregular waveforms under isolated 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

Technical Parameters

Model / Parameters (25℃)	SCK4-							
	300A	400A	500A	600A	800A	1000A	1500A	2000A
Primary Current I_{PN}	300A	400A	500A	600A	800A	1000A	1500A	2000A
Primary Current Max. Peak Value I_{PM}	± 900A	± 1200A	± 1500A	± 1800A	± 2400A	± 3000A	±3500 A	±3500 A
Output voltage V_{out} @±I_{PN}, R_L=10KΩ	±4V±1%							

Electrical Data

Item	Min.	Typical	Max.	Unit
Input power supply voltage range Vc (±5%) (Remark 1, Remark 2)	±11	±15	±18	V_{DC}
Current consumption Ic	-	±15	±20	mA
Withstand resistance R_{INS} @500V DC	1000	-	-	MΩ
Output voltage Vout @I_{PN}, R_L=10KΩ, T_A= 25℃	3.960	4.000	4.040	V
Output internal resistance R_{OUT}	-	102	-	Ω
Load Resistance R_L (Remark 3)	1	10	-	KΩ
Accuracy X @I_{PN}, T_A= 25℃	-	±1	-	%
Linearity ε_L @R_L=10KΩ, T_A= 25℃	-	±0.5	-	%I_{PN}
Offset voltage V_{OE} @T_A= 25℃	-	±10	±20	mV
Hysteresis voltage V_{OM} @ I_{PN}→0	-	±10	±20	mV
Temperature Coefficient of Offset Voltage TCV_{OE}	-	±0.5	±1	mV/℃
Output voltage temperature coefficient TCV_{out}	-	±0.05	±0.1	%/℃
Response time t_D @ 0→I_{PN}	-	3	5	us
Ambient operating temperature T_A	-40	25	125	℃
Ambient storage temperature T_s	-40	25	125	℃
Withstand voltage V_D@50Hz,60s,0.1mA		3000		V_{AC}
Weight m		210		g

Remarks:

1. If VC is less than the minimum value, the measurement will be inaccurate. If VC is greater than the maximum value, it may cause permanent failure of the measuring device.

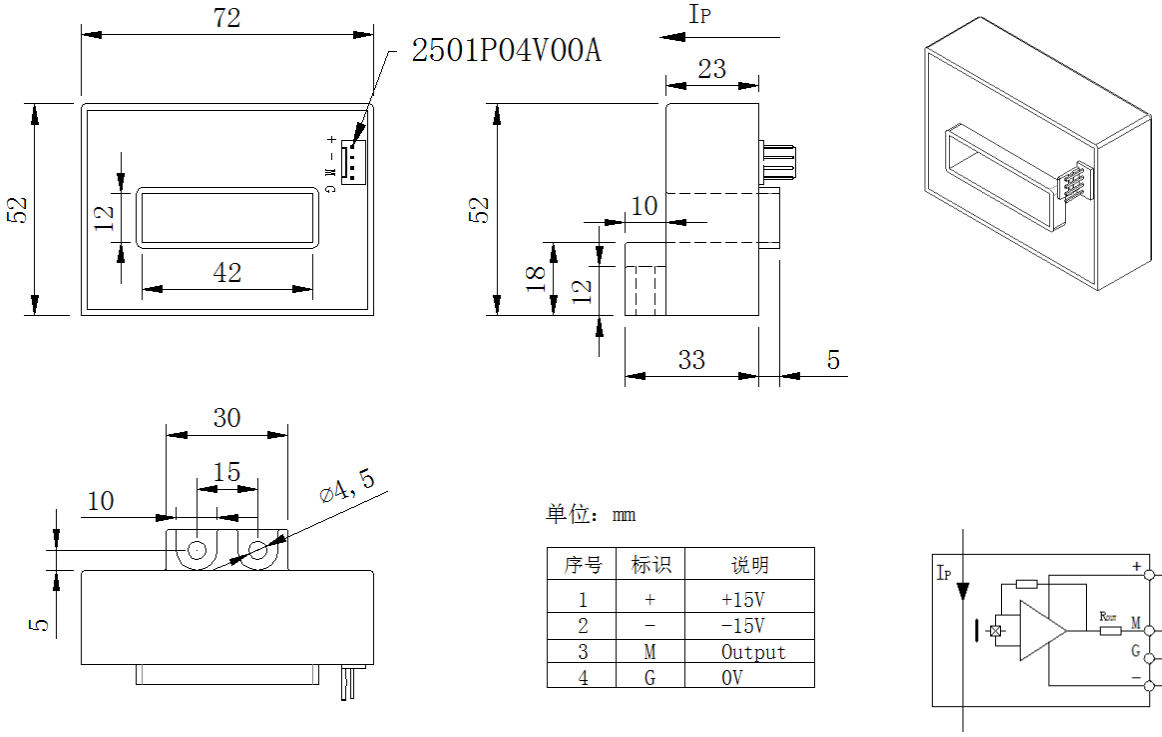
2. When ±12V＜VCC＜±15V，will reduce the measurement range.

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

4.di/dt＞50A/uS

Dimensions (in mm)

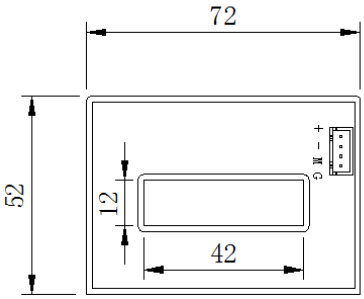
SCK4 Series

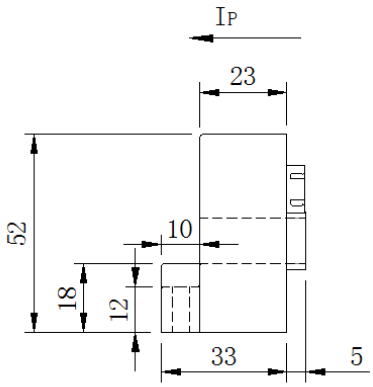


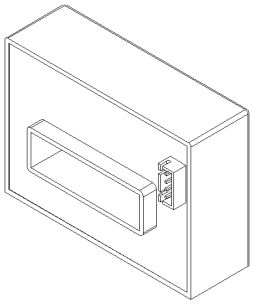
单位：mm

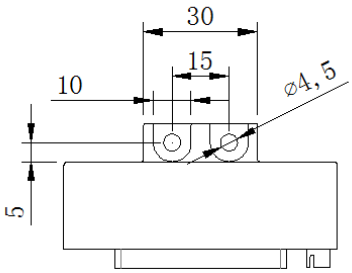
序号	标识	说明
1	+	+15V
2	-	-15V
3	M	Output
4	G	0V

SCK4A Series



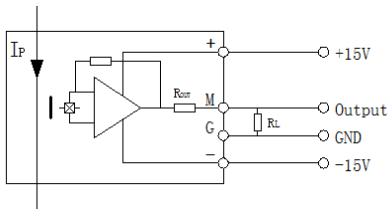






单位：mm

序号	标识	说明
1	+	+15V
2	−	−15V
3	M	Output
4	G	0V



Notes:

1. Size error: ±1mm;
2. Primary aperture: □ 41.6*12mm;
3. Fastening hole: φ4.5mm*2;
4. SCK4 output terminal: 2501P04V00A;
   SCK4A output terminal: JST B4B-XH-A
5. The IP indication direction is the positive direction of the current;
6. The temperature of the primary conductor shall not exceed 105°C;
7. Incorrect wiring may cause damage to the sensor.