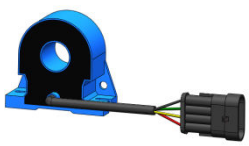
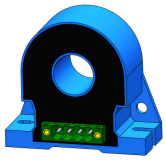
Hall effect Current Sensor

SCB11， SCB11R





Product description

Features

- Based on Hall effect measurement principle, close 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.
- Very low temperature drift, zero drift, fast response time, good linearity, accuracy can reach 0.1%.
- 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℃）	SCB11T-			
	50A	100A	200A	300A
Primary Current (A)I_{PN}	50A	100A	200A	300A
Primary Current Max. Peak Value (A) I_{PM}	±100A	±200A	±400A	±400A
Turns ratio K_N	1:1000	1:1000	1:2000	1:3000
Secondary coil internal resistance R_S @T_A=70℃	20Ω	20Ω	40Ω	45Ω
Output signal I_{SN} @I_{PN},	±50mA	±100mA	±100mA	±100mA
Measure resistance R_M @I_{PN},Vc=±15V,	50～200Ω	30～100Ω	30～90Ω	10～70Ω

Electrical Data

Item	Min.	Typical	Max.	Unit
Input power supply voltage range Vc （±5%）（Remark 1，Remark 2）	±12	±15	±18	V_{DC}
Current consumption Ic Ic @±15V	13mA+Output Current I_S			mA
Accuracy X @I_{PN}，T_A= 25℃	-	±0.5	±0.8	%
Linearity ε_L @R_L=10KΩ，T_A= 25℃	-	±0.1	±0.5	%
Offset current I_{OE} @T_A= 25℃,I_P=0	-	±0.2	±0.5	mA
Magnetic offset current I_{OM} @ I_P→0	-	±0.2	±0.5	mA
Temperature coefficient of offset current TCI_{OE}	-	±0.2	±1	mA
Response time t_D @ 0→I_{PN}	-	1	-	us
Band width BW	-	50	100K	Hz
Ambient operating temperature T_A	-40	25	85	℃
Ambient storage temperature T_s	-40	25	90	℃
Withstand voltage V_D@50Hz,60s,0.1mA	-	3000	-	V_{AC}
Weight m	-	110	-	g

Remarks:

1. VC is greater than the maximum value, which may cause permanent failure of the measurement

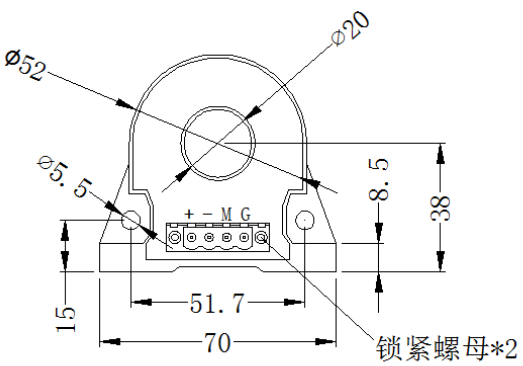
device.

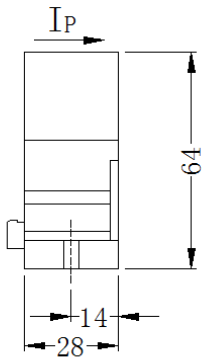
2. $I_{OUT} = I_{SN} * \frac{I_P}{I_{PN}} + I_{OE}$

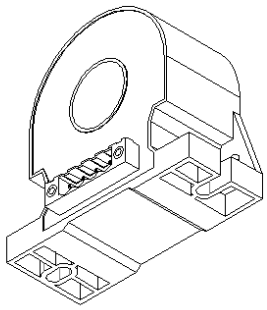
3. Follow speed di/dt＞100A/uS

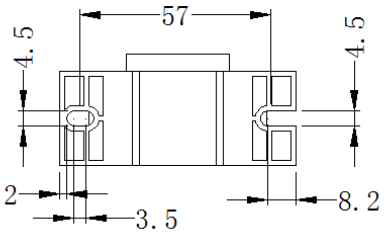
Dimensions (in mm)

SCB11T



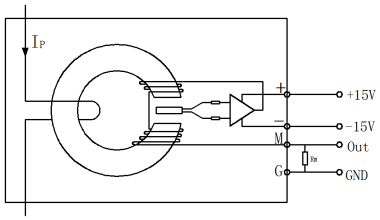






单位：mm

序号	标识	说明
1	+	+15V
2	-	-15V
3	M	Out
4	G	GND



Notes:

1. Size error: ±1mm;
2. Primary aperture: φ20mm;
3. Fastening hole: φ4.5mm*2;
4. SCB11T output terminal: 2EDGIV-5.08-4P;
5. The IP indication direction is the positive direction of the current;
6. Incorrect wiring may cause damage to the sensor.

Technical Parameters

Model / Parameters（25℃）	SCB11VT-/SCB11R-			
	50A	100A	200A	300A
Primary Current (A)I_{PN}	50A	100A	200A	300A
Primary Current Max. Peak Value (A) I_{PM}	±100A	±200A	±400A	±400A
Turns ratio K_N	1:1000	1:1000	1:2000	1:3000
Output Voltage V_{OUT} @I_{PN}，	±5V(0.5%)			

Electrical Data

Item	Min.	Max.	Typical	Unit
Input power supply voltage range Vc （±5%）（Remark 1，Remark 2）	±12	±15	±18	V_{DC}
Current consumption Ic Ic @±15V	13mA+输出电流 I_S			mA
Output internal resistance R_{OUT}	-	100	-	Ω
Load resistance R_L	-	10	-	KΩ
Accuracy X @I_{PN}，T_A= 25℃	-	±0.5	±0.8	%
Linearity ε_L @R_L=10KΩ，T_A= 25℃	-	±0.1	±0.5	%
Offset current I_{OE} @T_A= 25℃,I_P=0	-	±20	±25	mV
Magnetic offset current I_{OM} @ I_P→0	-	±10	±15	mV
Temperature coefficient of offset current TCI_{OE}	-	±0.2	±1	mA
Response time t_D @ 0→I_{PN}	-	1	-	us
Band width BW	-	50	100K	Hz
Ambient operating temperature T_A	-40	25	85	℃
Ambient storage temperature T_s	-40	25	90	℃
Withstand voltage V_D@50Hz,60s,0.1mA	-	3000	-	V_{AC}
Weight m	-	110	-	g

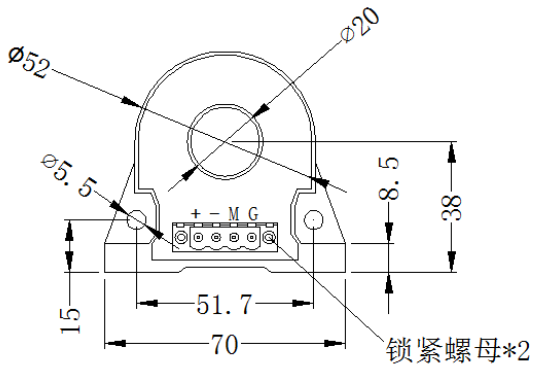
Remarks:

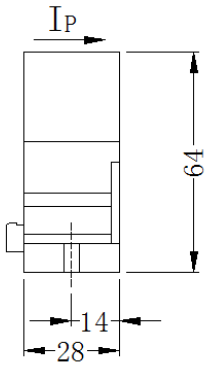
1. VC is greater than the maximum value, which may cause permanent failure of the measurement device.

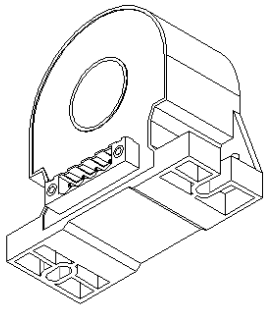
2. $V_{OUT} = 5.05 * \frac{R_L}{100 + R_L} * \frac{I_P}{I_{PN}} + V_{OE}$

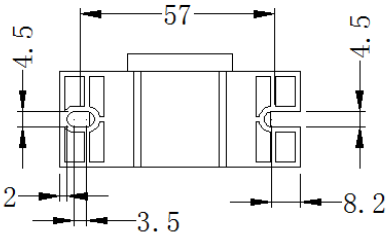
3.di/dt＞100A/uS

SCB11VT Dimension (in mm):





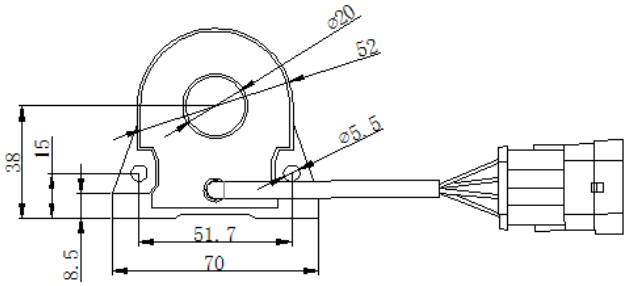


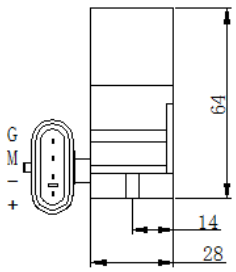


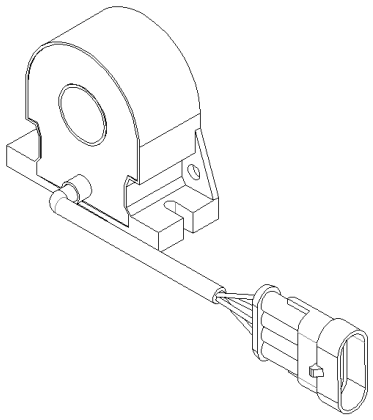
单位：mm

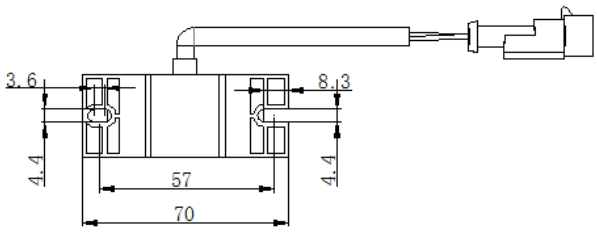
序号	标识	说明
1	+	+15V
2	-	-15V
3	M	Out
4	G	GND

SCB11R(Voltage output) Dimension (in mm):

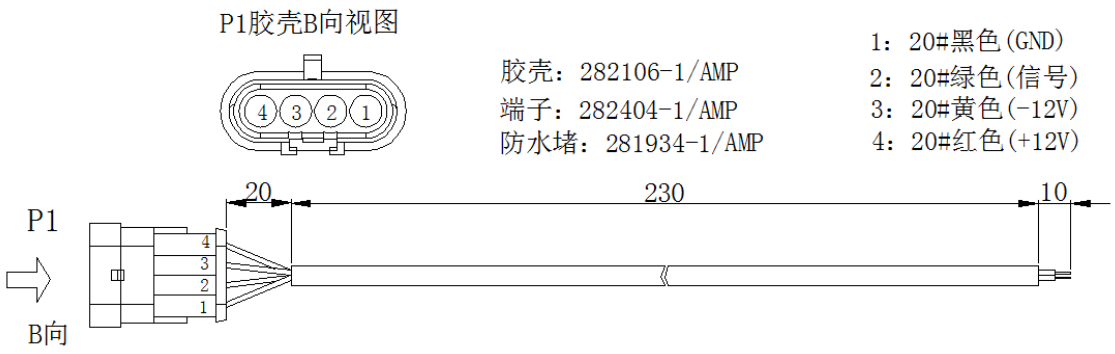








序号	标识	说明
1	+	+15V
2	-	-15V
3	M	Out
4	G	GND



Notes:

1. Size error: ±1mm;
2. Primary aperture: φ20mm;
3. Fastening hole: φ4.5mm*2;
4. SCB11VT output terminal: 2EDGVC-5.08-4P;
   SCB11R Case: 282106-1/AMP
   SCB11R Terminal: 282404-1/AMP
   SCB11R waterproof plug: 281934-1/AMP
5. The IP indication direction is the positive direction of the current;
6. Incorrect wiring may cause damage to the sensor.