

CURRENT SENSOR

PRODUCT SERIES: SFG-X.XCPL/A10-CA

PRODUCT PART NUMBER: SFG-0.3CPL/A10-CA

REVISION: Ver 1.0



Sinomags Technology Co., Ltd.

Website: www.sinomags.com

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1. Description

Features

- Measurement and Type B into one
- High and low level output(Type B part)
- Single supply voltage
- Self-check function
- Automotive qualified
- Up to 60 A RMS current per primary conductor
- Fast Tripping

Advantages

- Stable accuracy
- Low hysteresis
- Short response time
- Compact design

Applications

- Ground fault detection
- Converter leakage current detection
- Electric vehicle charge station
- IC-CPD
- Wallbox
- Developed for, EV On Board Charger:Automotive OBC up to 22 kW (V2L, V2G, V2H)
- Compatible with, Off board Charging.
Mode 2: In Cord - Control and Protection Device (IC-CPD)
Mode 3: Wall box chargers

Standards

- EN 50178
- UL 2231 CCID20
- IEC 61851
- UL1741 UL508 UL94-V0
- ISO26262 ASIL B: refer to safety manual

2. Absolute parameter

Absolute maximum ratings

Parameter	Symbol	Unit	Min	Typ	Max
Supply voltage	V _c	V			5.5
Ambient operating temperature	T _A	°C	-40		125
Ambient storage temperature	T _A	°C	-40		125

Stresses above these ratings may cause permanent damage. Exposure to absolute maximum ratings for extended periods may degrade reliability.

Isolation parameters

Parameter	Symbol	Unit	Value
RMS voltage for AC test 50Hz/1min	V _d	kV	4
Impulse withstand voltage 1.2/50μs	V _w	kV	7
Lightning surge current 8/20μs	I _{LS}	kA	5
Comparative tracking index	CTI	V	600
Application example	-	V	600,CAT III,PD2

3. Electrical data

Residual Current

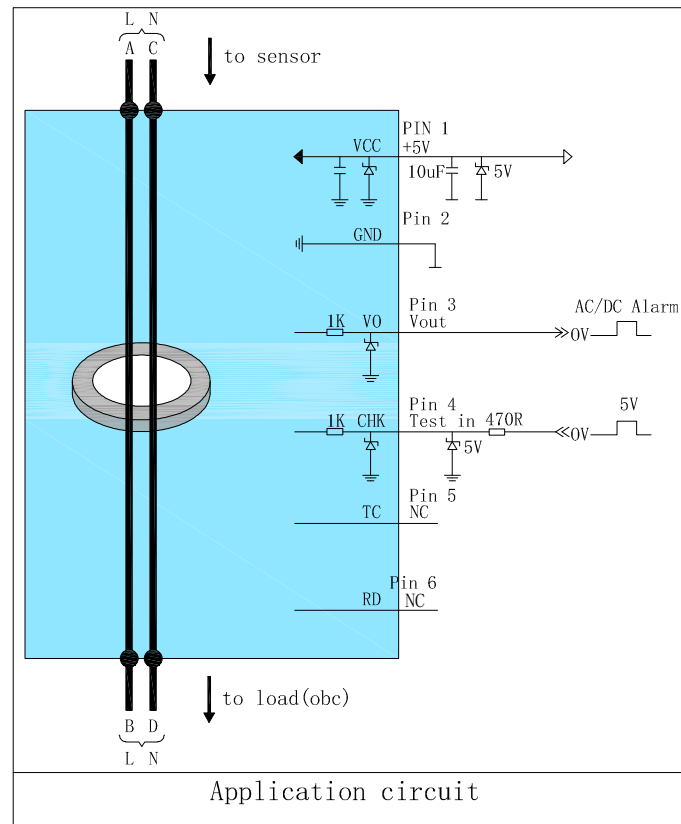
at $T_A = 25^\circ\text{C}$, $V_C = 5\text{ V}$.

Parameters	Symbol	Unit	Min	Typ	Max	Remark
Supply voltage	V_C	V	4.85	5	5.25	
Current consumption	I_C	mA		20	30	
Measuring range	$I_{\Delta N, \max}$	mA	-300		300	
AC residual operating current	I_{Δ}	mA rms		20		
Break time 20 mA AC	\	ms			200	
Break time 60 mA AC	\	ms			150	
Break time 150 mA AC	\	ms			40	
Output voltage (Check function)	V_{CK}	V		V_C		
Check current	I_{CK}	mA		30		
Check enable voltage	V_{CE}	V	3.3		V_C	
Check disabled voltage	V_{CD}	V		< 0.2		
Power on initialization	t_{on}	ms			60	
Primary nominal RMS current	I_M	A		60		

Pin Definition

No.	Symbol	Description
1	VCC	Power supply
2	GND	Power GND
3	Vo	High and low level output
4	CHK	Product Self-Check input
5	TC	NC-Float
6	TR	NC-Float
7-10	IP	Primary Current

4. Application information



Self-check Function

When the main circuit is not working, the system leakage current is 0, the Vout = Low level (0v).

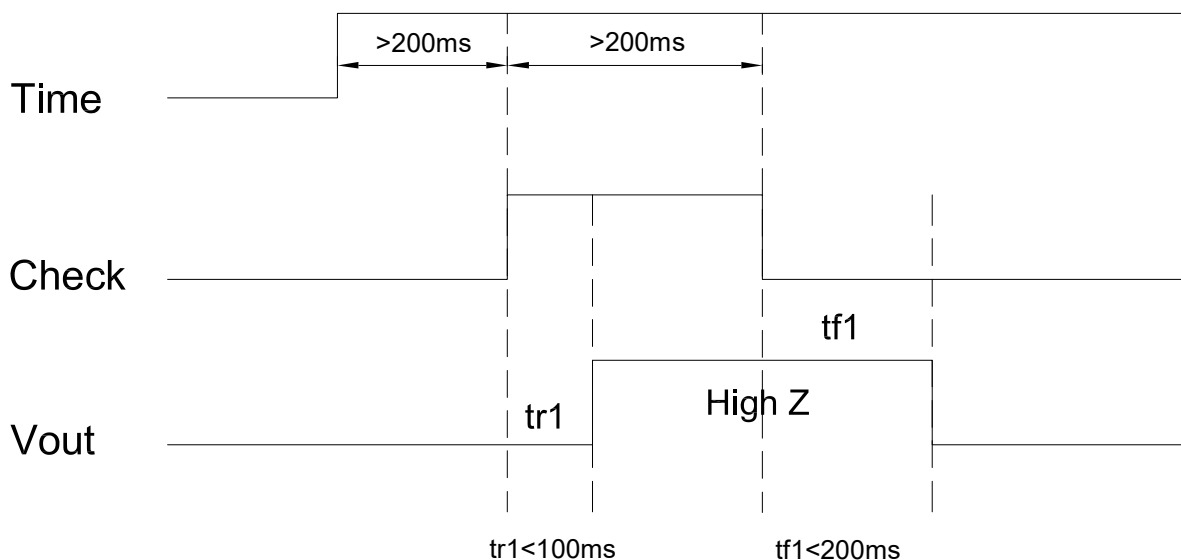
(a) .when the CHK PIN is placed at high level (3.3~5V), Vout rises from Low level to high level(Vcc);

(b) .when the CHK PIN is placed at low level (< 0.2V), the self-generated the Vout drops to Low level (0v).

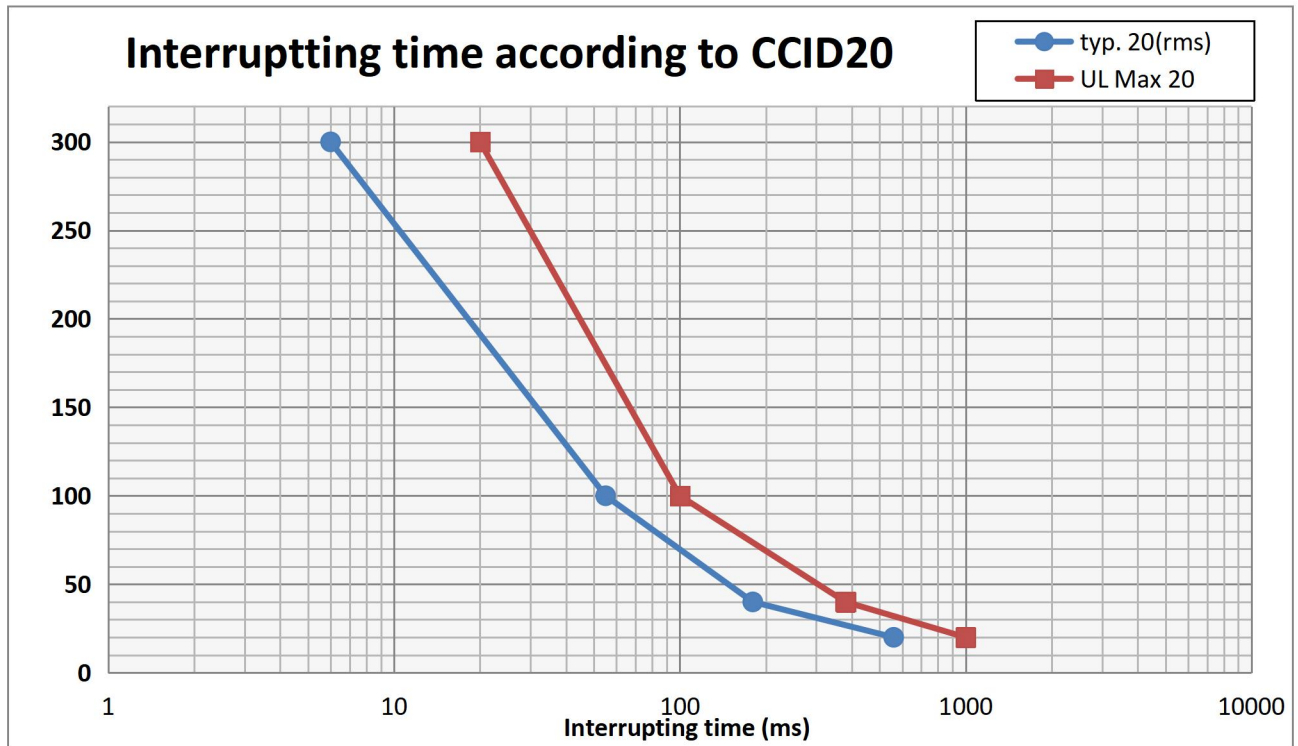
When the above (a) and (b) are completed, the leakage current sensor is judged to have normal function.

When the self-check function is not used, add a 0Ω resistance to the CHK PIIN and ground it.

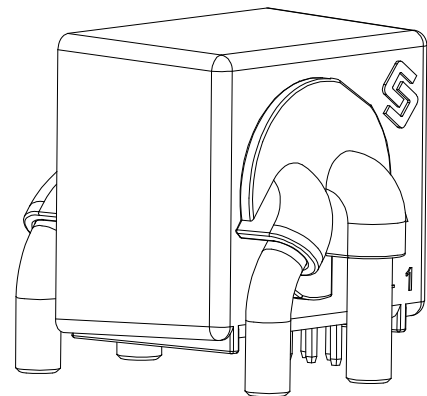
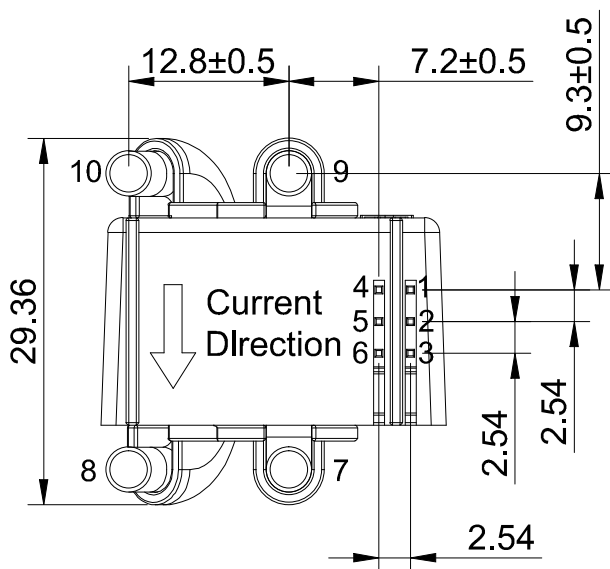
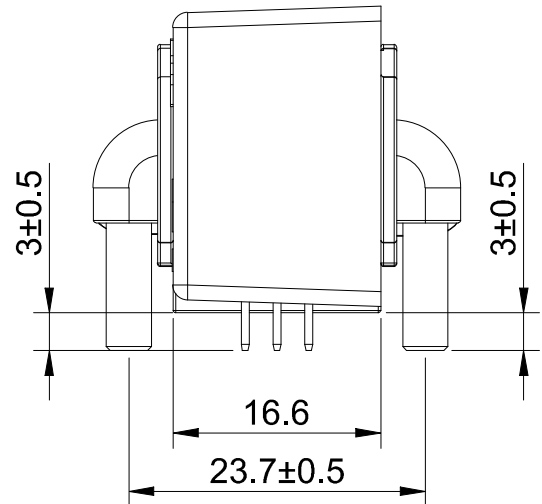
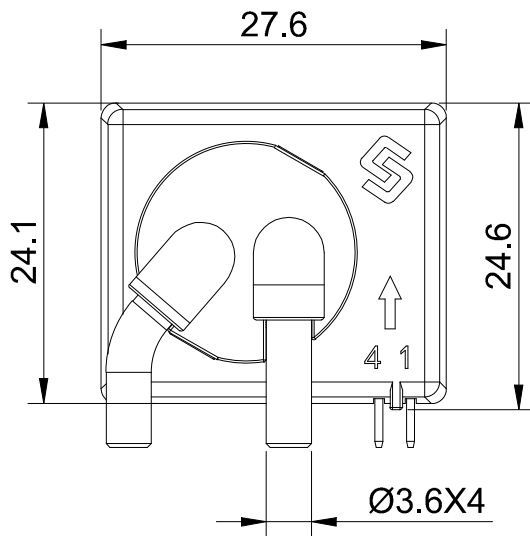
Self-check Timing Diagram



Interrupting Time (UL2231 CCID20)



5. Dimensions (in mm)



	DCI	DCP
Internal structure	4.4	4.5

Material : Fit UL94V-0 & RoHS requirements ;
General tolerance : ± 0.5
Unit : mm

