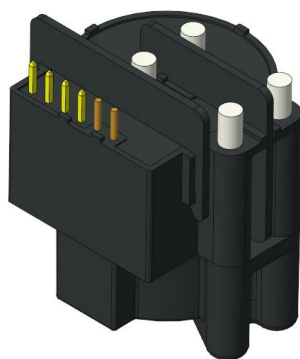


CURRENT SENSOR

PRODUCT SERIES: SFG-X.XCPL/A11

PRODUCT PART NUMBER: SFG-0.3CPL/A11

REVISION: Ver 1.2.1



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

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

Standards

- EN 50178
- IEC 62752 & IEC62955
- IEC 61851
- UL1741 UL508 UL94-V0

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		85
Ambient storage temperature	T _A	°C	-40		105

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	3
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 (Type B)

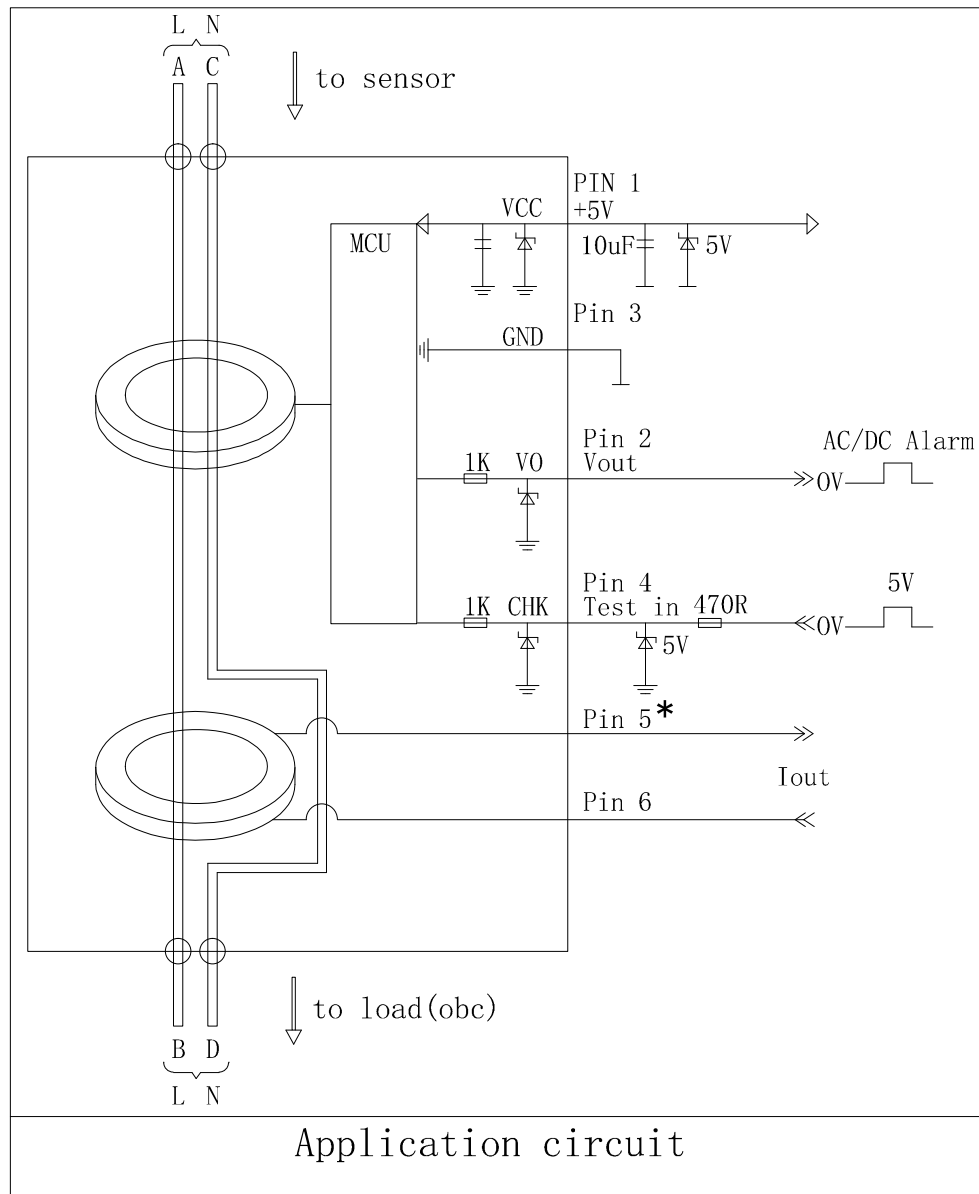
 at $T_A = 25^{\circ}\text{C}$, $V_C = 5\text{ V}$.

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	
DC residual operating current	I_{Δ}	mA DC		6		
AC residual operating current	I_{Δ}	mA rms		30		
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		
DC trigger level	\	mA			6	
AC trigger level	\	mA			30	
Break time 30 mA AC	\	ms	40		60	
Break time 60 mA AC	\	ms	15		25	
Break time 150 mA AC	\	ms	6		10	
Break time 6 mA DC	\	ms	100		300	
Power on initialization	t_{on}	ms			60	
Primary nominal RMS current	I_M	A		42		

Measurement

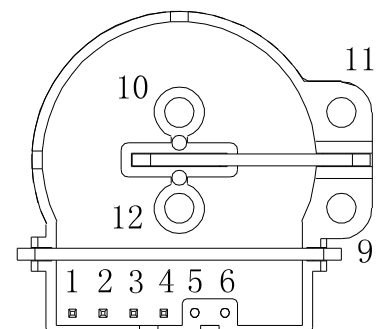
Parameters	Symbol	Unit	Min.	Typ.	Max.
Primary nominal rms current	I_{pn}	A		32	
Primary rms current measuring range	I_{pm}	A		43	
Turns ratio	N_s	NT		1000	
Secondary nominal r.m.s. current	I_{sn}	mA		32	
Accuracy $T_A = 25^{\circ}\text{C}$	X	%		0.1	
Linearity error within I_{pn}	ξ_L	% of I_{pn}		0.05	
Temperature drift	I_{OT}	ppm/K			5
Frequency range	F	Hz		50/60	

4. Application information



Pin Definition

No.	Symbol	Description
1	VCC	Power supply
2	Vo	High and low level output (For RCD)
3	GND	Power GND
4	CHK	Self-Check input(For RCD)
5	Mo *	* Measurement Secondary output
6	Mo	Measurement Secondary output
9	IP1+	Primary Current 1 I +
10	IP1-	Primary Current 1 I -
11	IP2+	Primary Current 2 I +
12	IP2-	Primary Current 2 I -



Self-check Function

When the main circuit is not working, the system leakage current is 0, the V_{out} = Low level (0v).

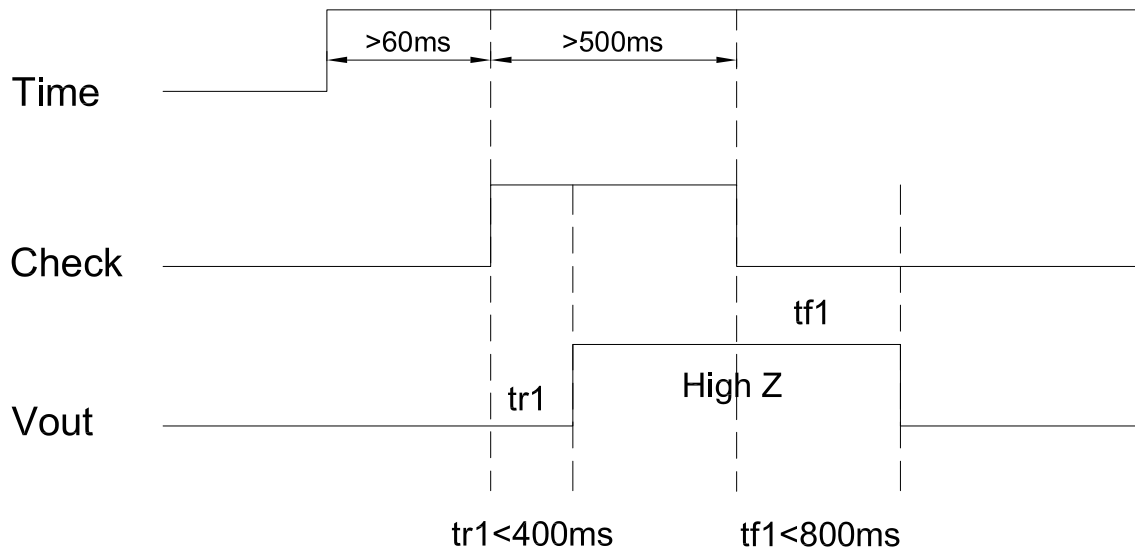
(a) .when the CHK PIN is placed at high level (3.3~5V), V_{out} rises from Low level to high level(V_{cc});

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

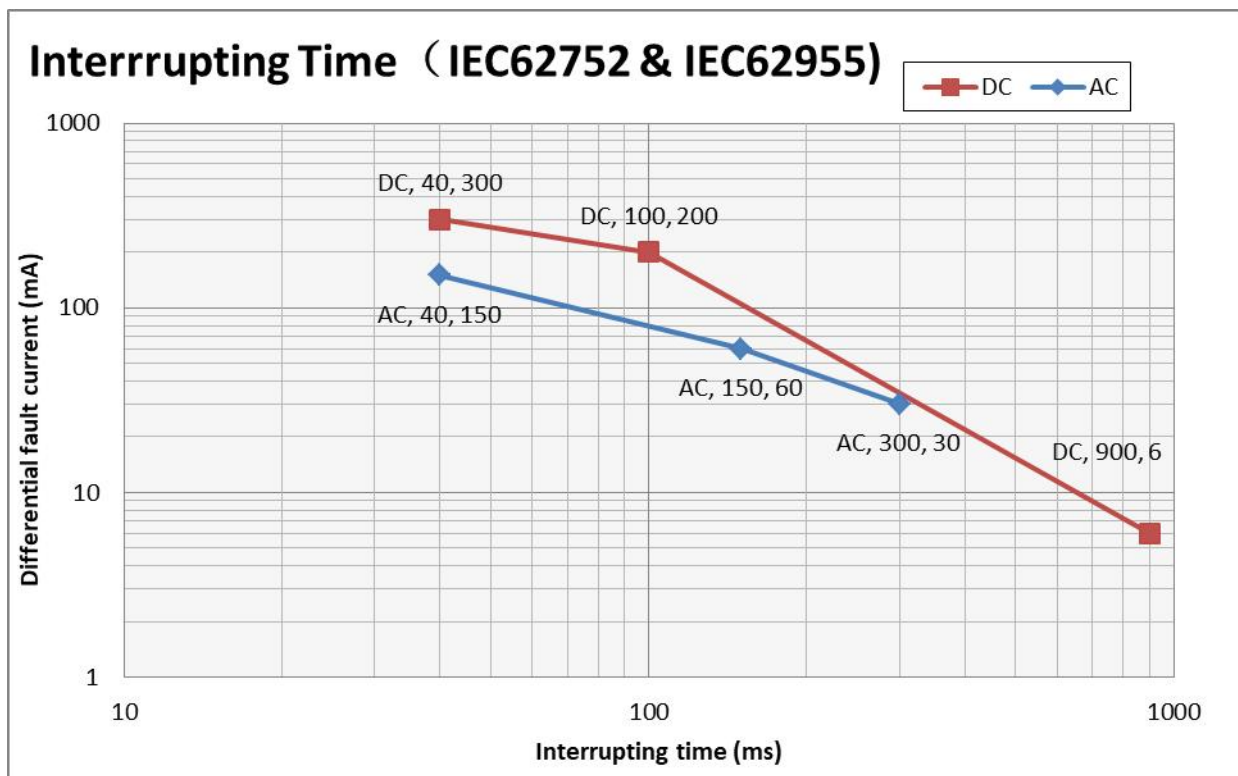
When the above (a) and (b) are completed, the leakage current sensor is judged to have normal function.

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

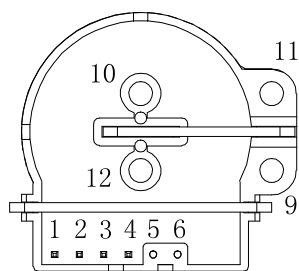
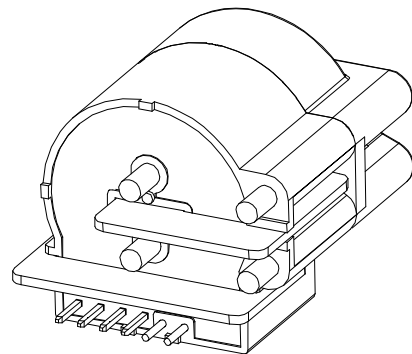
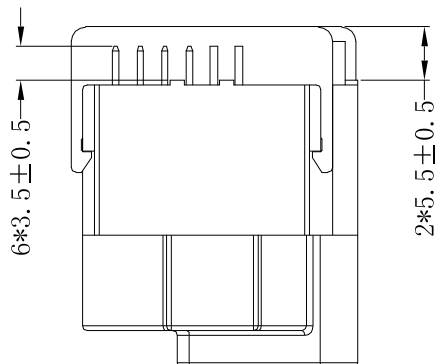
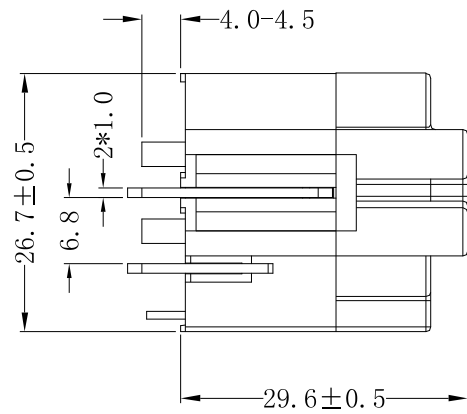
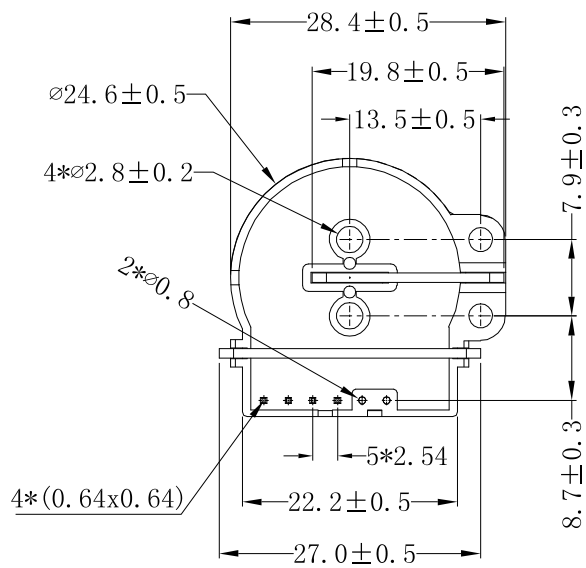
Self-check Timing Diagram



Interrupting Time (IEC62752 & IEC62955)



5. Dimensions (in mm)



6. Material list

Parts	Material	Specs
Busbar	Cu	T2
Chip	Silicon wafer	\
Shell	Nylon	PA66
Magnetic core	Fe	Customized
Pins	Cu	Ni based Au plating

7. Packing information

- 1) Products are put in the following exclusive tray.
- 2) Maximum quantity in one inner box:5 trays.
- 3) Products label attached on an inner box.
- 4) In Carton box, must include the below:
 - * The marking of handling attention etc.
 - * Barcode: Order number, material No. ,and Batch No.
 - * SINOMAGS LOGO
 - * the RoHS marking or label
 - * *the ESD specification portion

Blister box

Container	Quality of the material	Dimension(mm)	Max Quantity
Tray	PS(anti-static)	264*224*36.3	20pcs
Inner box	Corrugated Cardboard	315*220*230	100pcs
Shipping box	Corrugated Cardboard	480*340*520	400pcs

