

CURRENT SENSOR

PRODUCT SERIES: STB-CAB1000

PRODUCT PART NUMBER: STB-CAB1000X-xx

VERSION: Ver 2.0.4

STB-CAB1000N-x



STB-CAB1000M-x



Sinomags Technology Co., Ltd.

Web site: www.sinomags.com

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1. Characteristic

CAB1000 Series current sensor is based on Sinomags Active Close Loop technology, with CANBUS digital output. It can be used to measure 1000A rated current. Using a proprietary Digital Compensation technology. This product brings the best combination of performance and reliability.

- ALL temperature Error $\pm 0.4A$ @ $\pm \leq 80A$, Sensitivity error Accuracy $\pm 0.5\%$ @ $> \pm 80-1000A$.
- High electromagnetic compatibility against complex electromagnetic interference environment.
- Excellent anti magnetic interference.
- CANBUS output, convenient for system integration.
- Ultra-high over current capability

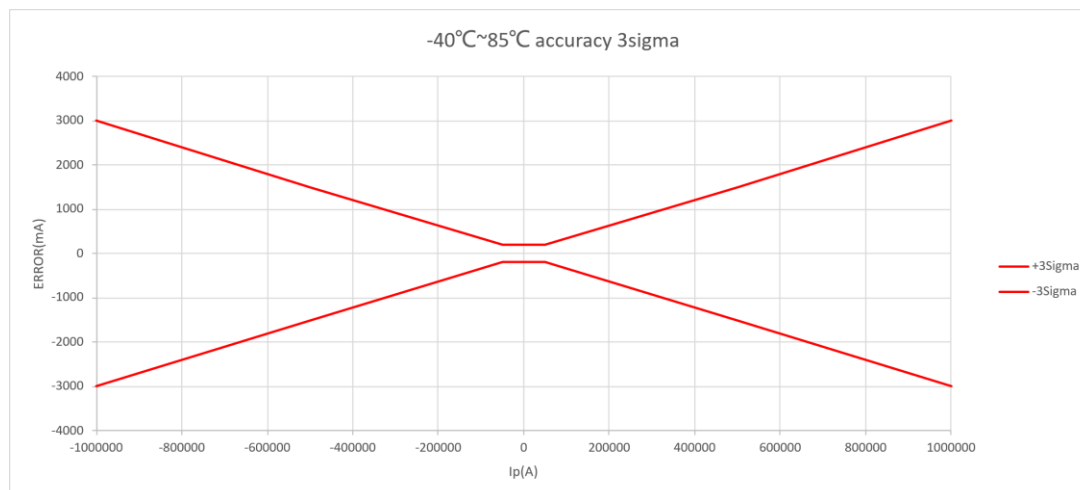
2. General parameters

Working temperature: $-40^{\circ}C \sim +85^{\circ}C$;
Insulation resistance: $\geq 500 M\Omega$;
Rms voltage for AC insulation test 50Hz 1min 2.5KV
Over-voltage 24V/1 minute
Electrostatic discharge voltage 13KV

3. Electrical parameters

Parameter	Symbol	Unit	Specification			Conditions
			Min	Type	Max	
Nominal Measuring Range	I_{PN}	A	-1000		1000	
Supply Voltage	U_C	V	9.2	12	18	Full accuracy
Current Consumption @ $I_P=0A$	I_C	mA		40		$U_C=12V, T=25^{\circ}C$
Current Consumption @ $I_P=1000A$	I_C	mA		400		$U_C=12V, T=25^{\circ}C$
All Temperature Sensitivity error Accuracy @ $I_P > 80A$	X_G	%	-0.5		0.5	$=-40$ to $85^{\circ}C$; ± 3 sigma
All Temperature Sensitivity error Accuracy @ $I_P \leq 80A$	X_G	A	-0.4		0.4	$=-40$ to $85^{\circ}C$; ± 3 sigma
Offset=0A	I_{OS}	A	-0.4		0.4	$=-40$ to $85^{\circ}C$; ± 3 sigma
Linearity error with I_{PN}	ϵ_L	%		0.1		@room temperature
Temperature coefficient of G	TCG	ppm/ $^{\circ}C$		20		
Creepage distance	d_{CP}	mm		52		Centre bore
Electric clearance	d_{CI}	mm		48		Centre bore

4. Total Error Graph for CAB-1000



5. CAB-1000 CAN Output specification

CANBUS speed refer to product version table

CANBUS protocol: version 2.0A/B

CAN oscillator tolerance: 0.3125%

Byte order: big endian (Motorola)

120 ohm termination resistor to be added externally, internal CAN impedance = 4.8Kohm

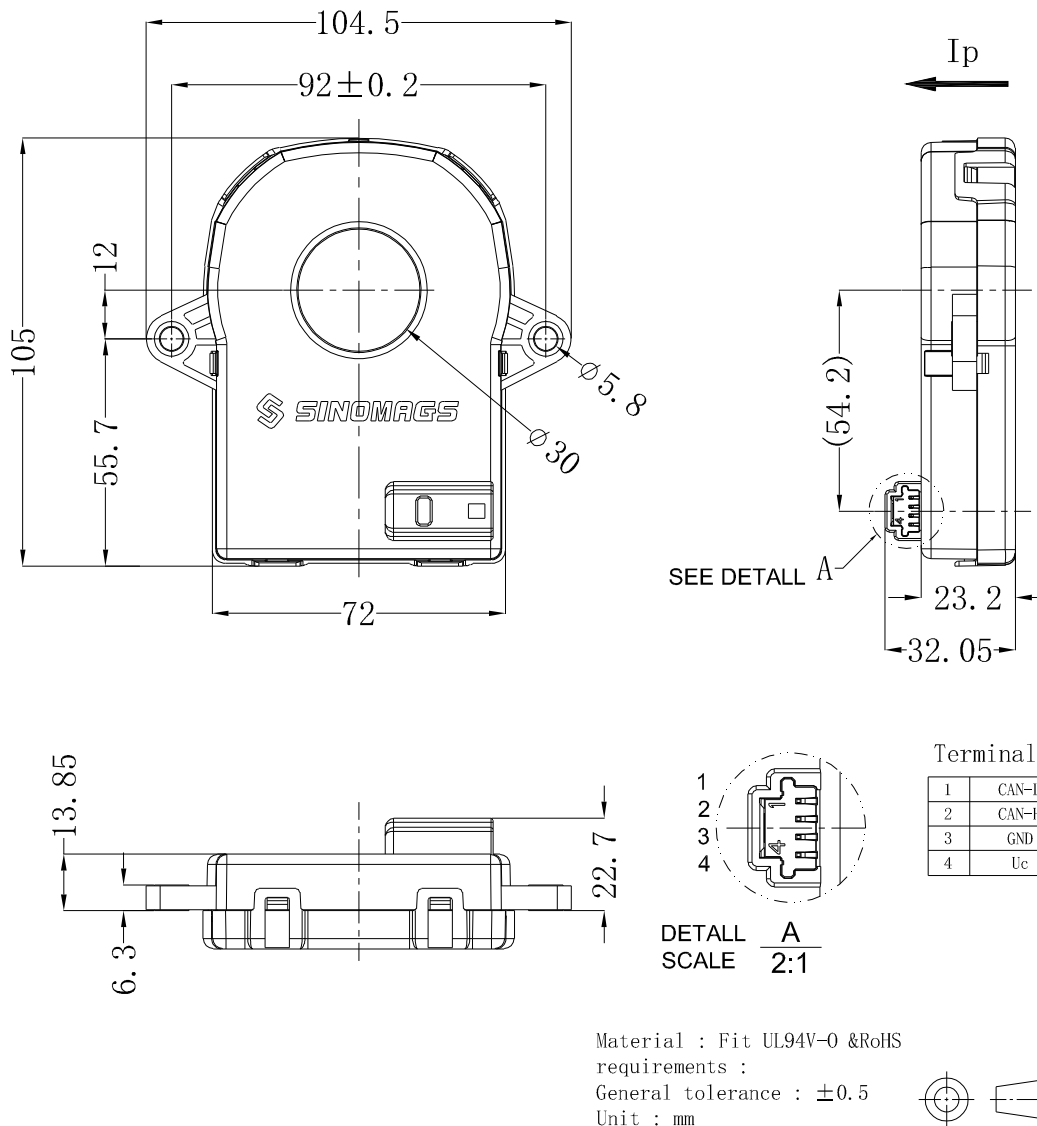
Message Description	CAN ID	name	Data Length (bytes)	Type of frame	Message launch type	Signal description	Signal Name	Start bit	End bit
Current Ip (mA)	0x3C1	CAB1000	8	stand ard	Cyclic message every 10ms	Ip Value: 80000000H= 0mA, 7FFFFFFFH= - 1mA, 80000001H= 1mA	IP_VALUE	0	31
						b0-b6:Error information	ERROR_INFORMATION	32	38
						b7:Error indication	ERROR_INDICATION	39	39
						Ip Maximum: 80000H=0mA 7FFFFFFH=-1mA 800001H=1mA	MAX_CURRENT_VALUE	40	63

6. Diagnostic Trouble Code (DTC)

FAILLURE MODE	Ip VALUE	ERROR INDICATION	ERROR INFORMATION
Overcurrent Detection Ip> Approximate 1050A	FFFFFFFF	1	0x41
Closed-loop reference voltage over range	FFFFFFFF	1	0x42
Signal not available for more than 100ms	FFFFFFFF	1	0x44
Supply voltage out of range	FFFFFFFF	1	0x46

7. Dimensions: (in mm)

Connector type: TYCO 1473672-1



Terminals

1	CAN-L
2	CAN-H
3	GND
4	Uc

PIN OUT	
1	CAN-L
2	CAN-H
3	GND
4	Uc

Mechanical characteristics

1. Unspecified tolerance: ± 0.5 mm
2. Plastic housing material: PA66 +GF30%
3. Mounting screw M5, torque max 3 Nm
4. Mass: $192\text{g} \pm 5\text{g}$
5. Contacts: Matte-tin 3.0um min 5.0um max on solder tail, with entire contact underplated 4.0um min 5.0um max, Nickel-palladium alloy

8. Application

- Accurate current measurement for battery management applications

9. Product definition statement

	STB	-	CAB	1000	N	-	5	1
Current sensor								
Product information								
Rated current								
Installing form								
	N:	Perforation $\varnothing$ 30mm, mounting hole $\varnothing$ 5.8mm "Copper Shaft Column Version"						
	M:	Perforation $\varnothing$ 30mm, mounting hole $\varnothing$ 5.8mm "Non-Copper Shaft Column Version"						
Baud rate								
	1:	125k						
	2:	250k						
	5:	500k						
CAN ID								
	1:	3C1						
	2:	3C2						
	3:	3C3						
	4:	3C4						
	5:	3C5						
	9:	3C0						