SINOMAGS
希 磁 科 技

CURRENT SENSOR

PRODUCT SERIES: STB-CAB1000

PRODUCT PART NUMBER: STB-CAB1000X-xxx

VERSION: Ver 2.0.5

STB-CAB1000N-xxx

STB-CAB1000M-xxx

Sinomags Technology Co., Ltd.

Web site: www.sinomags.com

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CONTENT

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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 ± 0.4A @ ±≤80A, Sensitivity error Accuracy ±0.5%@ > ±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°C~+85°C；
Insulation resistance：   >= 500 MΩ；
Rms voltage for AC insulation test   50Hz 1min 2.5KV
Over-voltage   24V/1 minute
Electrostatic discharge voltage   13KV
Sampling frequency：   7.5K

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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℃
Current Consumption @I_P=1000A	I_C	mA		400		U_C=12V, T=25℃
All Temperature Sensitivity error Accuracy @ IP＞80A	X_G	%	-0.5		0.5	=-40 to 85℃; ± 3 sigma
All Temperature Sensitivity error Accuracy @ IP≤80A	X_G	A	-0.4		0.4	=-40 to 85℃; ± 3 sigma
Offset=0A	I_{OS}	A	-0.4		0.4	=-40 to 85℃; ± 3 sigma
Linearity error with I_{PN}	$ε_L$	%		0.1		@room temperature
Temperature coefficient of G	TCG	ppm/℃		20		
Creepage distance	d_{CP}	mm		52		Centre bore
Electric clearance	d_{CI}	mm		48		Centre bore

4. Total Error Graph for CAB-1000
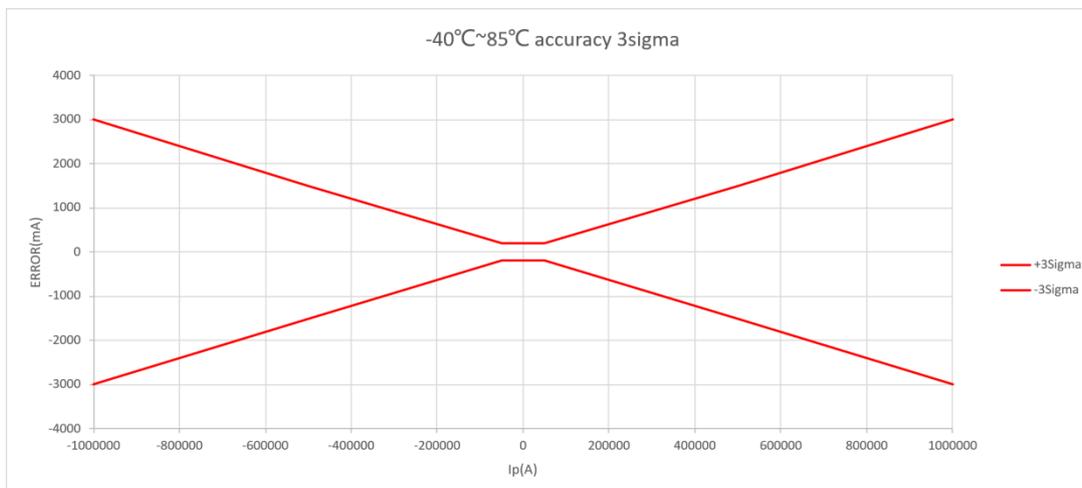
5. CAB-1000 CAN Output specification

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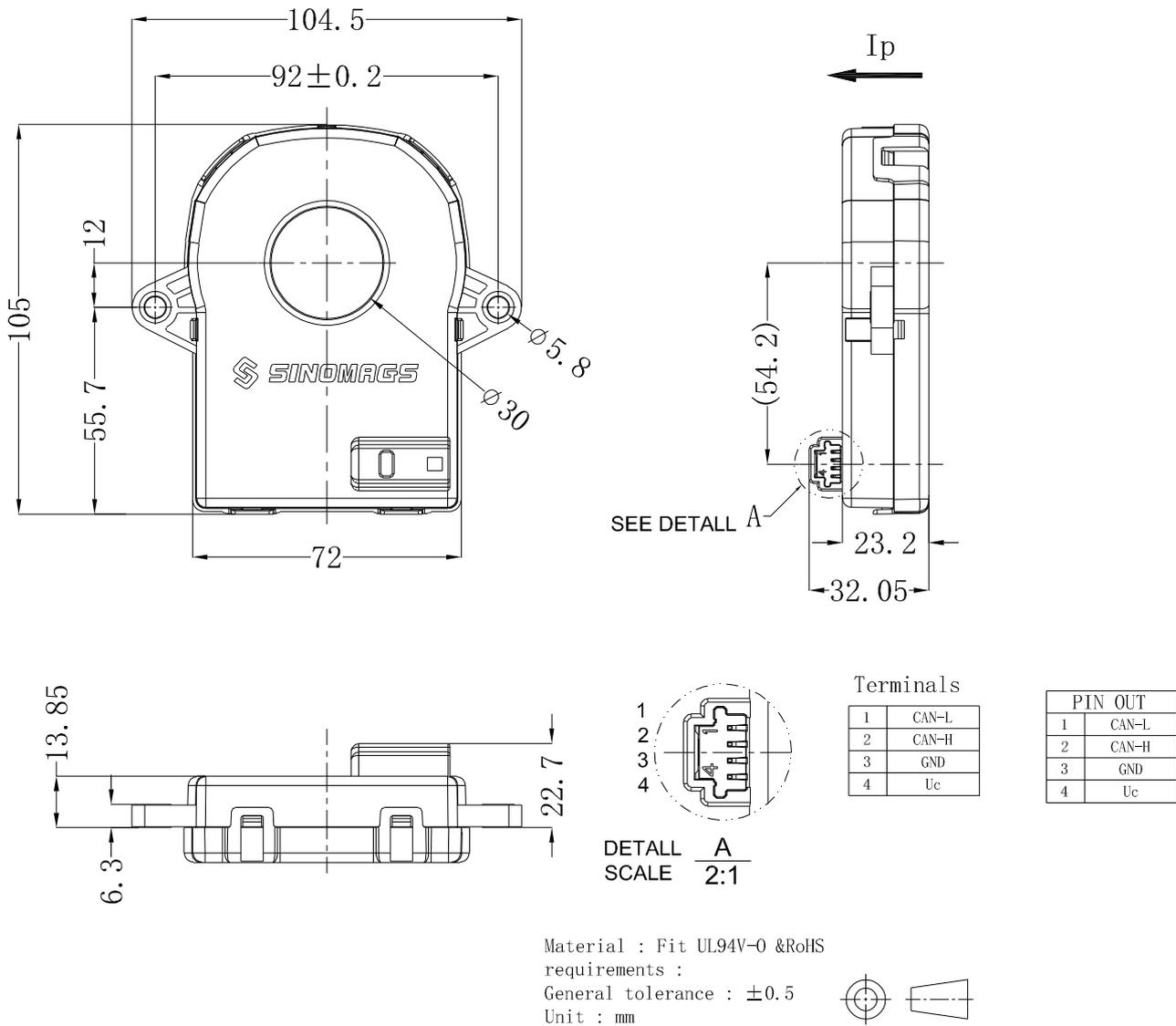
Message Description	CAN ID	name	Data Length (bytes)	Type of frame	Message launch type	Signal description	Signal Name	Start bit	End bit
Current Ip （mA）	0x3C1	CAB1000	8	standard	Cyclic message every 10ms	Ip Value： 80000000H= 0mA, 7FFFFFFFH= - 1mA, 80000001H= 1mA	IP_VALUE	0	31
						b0-b6:Error information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

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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

DETAIL A
SCALE 2:1

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

Mechanical characteristics

1.   Unspecified tolerance: ±0.5mm

2.   Plastic housing material: PA66 +GF30%

3.   Mounting screw M5, torque max 3 Nm

4.   Mass：192g±5g

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

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9. Product definition statement

STB - CAB 1000 N - 5 1 1

Current sensor

Producut information

Rated current

Installing form

N: Perforation φ 30mm, mounting hole φ 5.8mm "Copper Shaft Column Version"

M: Perforation φ 30mm, mounting hole φ 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

Matched resistance

Black：4.8KΩ
1：120Ω