

CURRENT SENSOR

PRODUCT SERIES: STB-CAB500

PRODUCT PART NUMBER: STB-CAB500

VERSION: Ver 4.4



Sinomags Technology Co., Ltd.

Web site: www.sinomags.com

CONTENT

1. Characteristic	2
2. General parameters	2
3. Electrical parameters	2
4. Total Error Graph for CAB-500.....	3
5. CAB-500 CAN Output specification.....	3
6. Diagnostic Trouble Code (DTC).....	4
7. Dimensions: (in mm)	4
8. Application	5

1. Characteristic

CAB500 Series current sensor is based on Sinomags Active Close Loop TMR technology, with CANBUS digital output. It can be used to measure 500A rated current. Using a proprietary Digital Compensation technology. This product brings the best combination of performance and reliability.

- Error $\pm 0.2A$ @ $\pm <30A$, Error $\pm 0.5A$ @ $\pm <100A$; Error $\pm 1.0A$ @ $\pm 100A-300A$; Error $\pm 1.5A$ @ $>\pm 300-500A$.
- High electromagnetic compatibility against complex electromagnetic interference environment.
- Excellent anti magnetic interference.
- Can bus output, convenient for system integration.
- Ultra-high over current capability

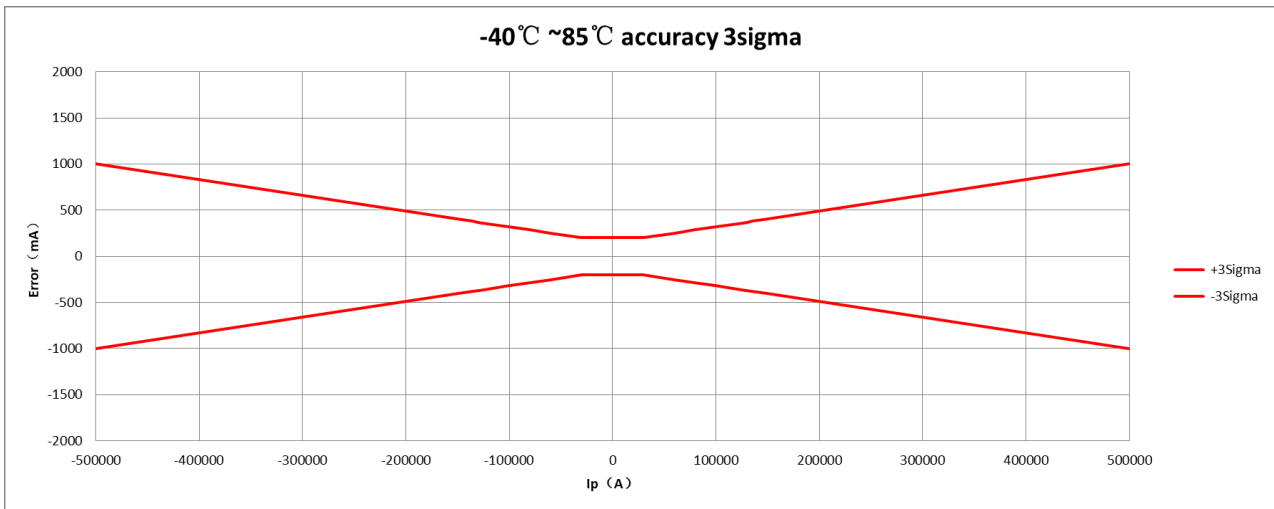
2. General parameters

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 4KV

3. Electrical parameters

Parameter	Symbol	Unit	Specification			Conditions
			Min	Type	Max	
Nominal Measuring Range	I_{PN}	A	-500		500	
Supply Voltage	U_C	V	7.2	12	18	Full accuracy
Current Consumption @ $I_P=0A$	I_C	mA		26		$U_C=12V, T=25^{\circ}C$
Current Consumption @ $I_P=500A$	I_C	mA		250		$U_C=12V, T=25^{\circ}C$
Sensitivity error Accuracy	X_G	%	-0.5		0.5	$=-40$ to $85^{\circ}C$; $\pm 3 \sigma (>\pm 30A)$
Offset=0A	I_{OS}	A		± 0.2		$=-40$ to $85^{\circ}C$; $\pm 3 \sigma$
Linearity error with I_{PN}	ϵ_L	%		0.1		@room temperature
Temperature coefficient of G	TCG	ppm/ $^{\circ}C$		20		

4. Total Error Graph for CAB-500



5. CAB-500 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 = 2.4Kohm

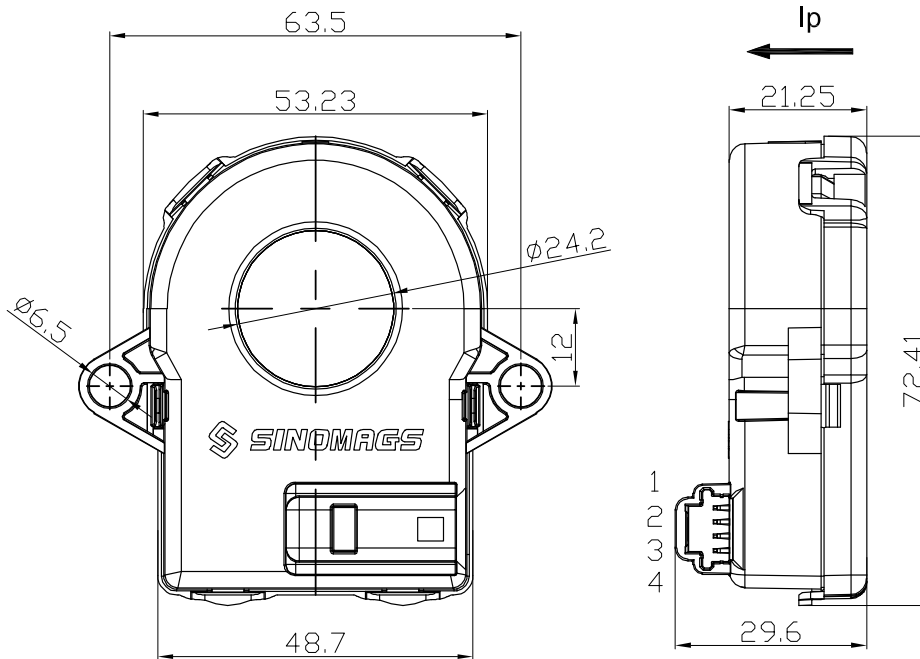
Message Description	CAN ID	name	Data Length (bytes)	Type of frame	Message launch type	Signal description	Signal Name	Start bit	End bit
Current Ip (mA)	0x3C2	CAB500	8	standard	Cyclic message every 10ms	Ip Value: 80000000H= 0mA, 7FFFFFFFH= - 1mA, 8000001H= 1mA	IP_VALUE	0	31
						b0:Error information (0=Normal ,1=failure)	ERROR_INDICATION	32	32
						b7-b1:RxQuality (0-100%)	ERROR_INFORMATION	33	39
						Vacant bits (fix to 0)	UNDEFINE	40	47
							PCBA Ver	48	55
	FIRMWARE Ver	56	63						

6. Diagnostic Trouble Code (DTC)

FAILLURE MODE	Ip VALUE	ERROR INDICATION	ERROR INFORMATION
Overcurrent Detection Ip> Approximate 520A	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 1-473672-1



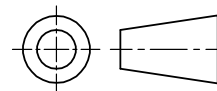
Terminals

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

Material : Fit UL94V-0 & RoHS requirements ;

General tolerance : ± 0.5

Unit :mm



Mechanical characteristics

1. Unspecified tolerance: ± 0.5 mm
2. Plastic housing material: PBT+ GF30%
3. Mounting screw M6, torque max 3 Nm
4. Mass: 78g \pm 5g

8. Application

- Hybrid and electric vehicle battery pack
- Accurate current measurement for battery management applications