

CURRENT SENSOR

PRODUCT SERIES: STB-CAB1500

PRODUCT PART NUMBER: STB-CAB1500

VERSION: Ver 1.9



Sinomags Technology Co., Ltd.

Web site: www.sinomags.com

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1. Characteristic

CAB1500 Series current sensor is based on Sinomags Active Close Loop TMR technology, with CANBUS digital output. It can be used to measure 1500A rated current. Using a proprietary Digital Compensation technology. This product brings the best combination of performance and reliability.

- High electromagnetic compatibility against complex electromagnetic interference environment.
- Excellent anti magnetic interference.
- Can bus output, convenient for system integration.
- Ultra-high over current capability

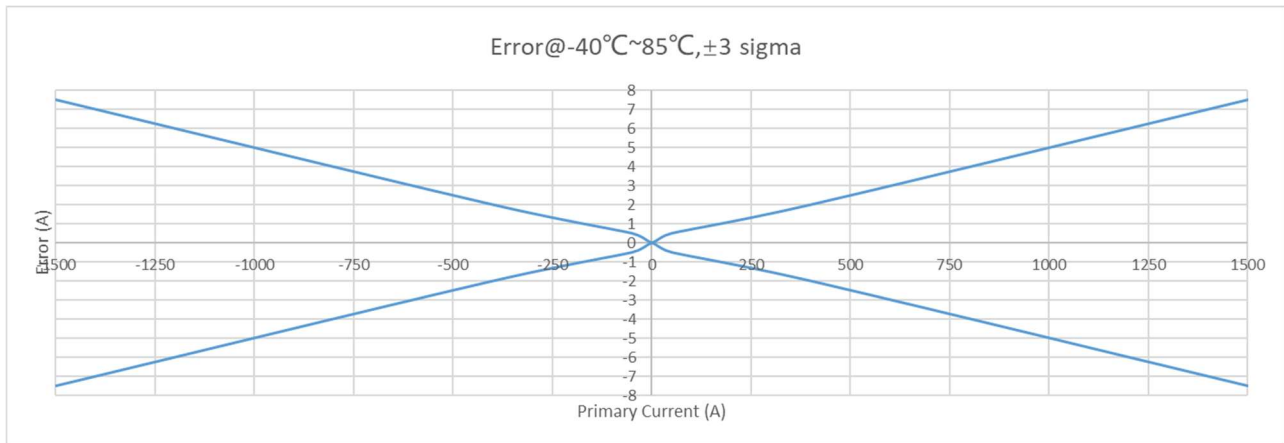
2. General parameters

Working temperature:	-40°C~+85°C;
Insulation resistance:	$\geq 500 \text{ M}\Omega$;
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	-1550		1550	
Supply Voltage	U_C	V	7.2	12	18	Full accuracy
Current Consumption @ $I_P=0A$	I_C	mA	27	32	37	$U_C=12V$, $T=25^\circ C$
Current Consumption @ $I_P=1500A$	I_C	mA		260		$U_C=12V$, $T=25^\circ C$
Offset=0A	I_{OS}	A	-0.1		0.1	$T=-40$ to $85^\circ C$; $\pm 3 \text{ sigma}$
Accuracy error with $I_{PN} \leq \pm 10A$	ϵ_A	A	-0.1		0.1	$T=-40$ to $85^\circ C$; $\pm 3 \text{ sigma}$
Linearity error with $\pm 10A < I_{PN} \leq \pm 30A$	ϵ_L	%	-1		1	$T=-40$ to $85^\circ C$; $\pm 3 \text{ sigma}$
Linearity error with $\pm 30A < I_{PN} \leq \pm 450A$	ϵ_L	%	-0.4		0.4	$T=-40$ to $85^\circ C$; $\pm 3 \text{ sigma}$
Linearity error with $\pm 450A$ $< I_{PN} < \pm 1500A$	ϵ_L	%	-0.5		0.5	$T=-40$ to $85^\circ C$; $\pm 3 \text{ sigma}$
Temperature coefficient of G	TCG	ppm/ $^\circ C$		20		

4. Total Error Graph for CAB-1500



5. CAB-1500 CAN Output specification

CANBUS speed refer to product version table,

CANBUS protocol: version 2.0A/B

CAN oscillator tolerance: 0.3125%

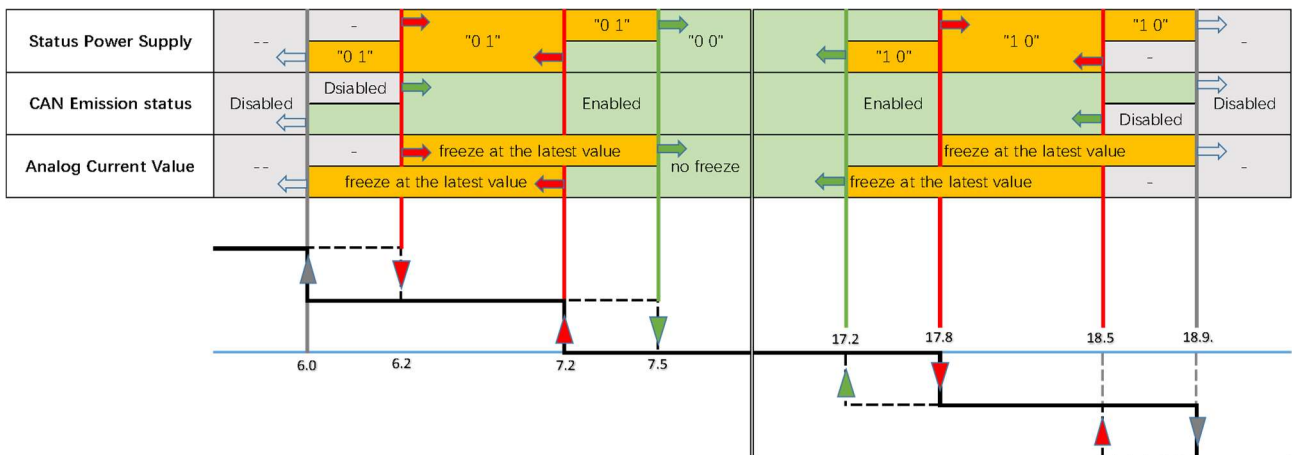
Byte order: big endian (Motorola)

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

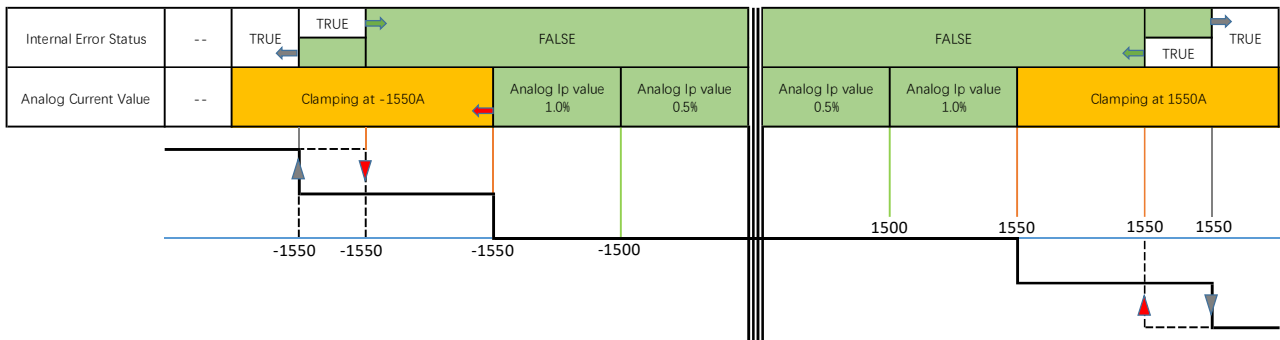
Message Description	CAN ID	name	Data Length (bytes)	Type of frame	Message launch type	Signal description	Signal Name	Start bit	End bit
Current Ip (mA)	0x3C2	CAB 1500	8	standard	Cyclic message every 10ms	BYTE0		0	7
						Ip Value: 800000H= 0mA, 7FFFFFFH= - 1mA, 800001H= 1mA	IP_VALUE	8	31
						B0:Error 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

CAN Frame Content								
	7	6	5	4	3	2	1	0
BYTE 0	Sequence Counter I _p				Status Power Supply		Status Internal	Reserved
	MSB			LSB	MSB	LSB		
BYTE 1	Analog Current							
	MSB							
BYTE 2	Analog Current							
BYTE 3	Analog Current							
								LSB
BYTE 4	Error Information							
BYTE 5	Undefine							
BYTE 6	PCBA Ver							
BYTE 7	Firmware Ver							
	MSB							LSB

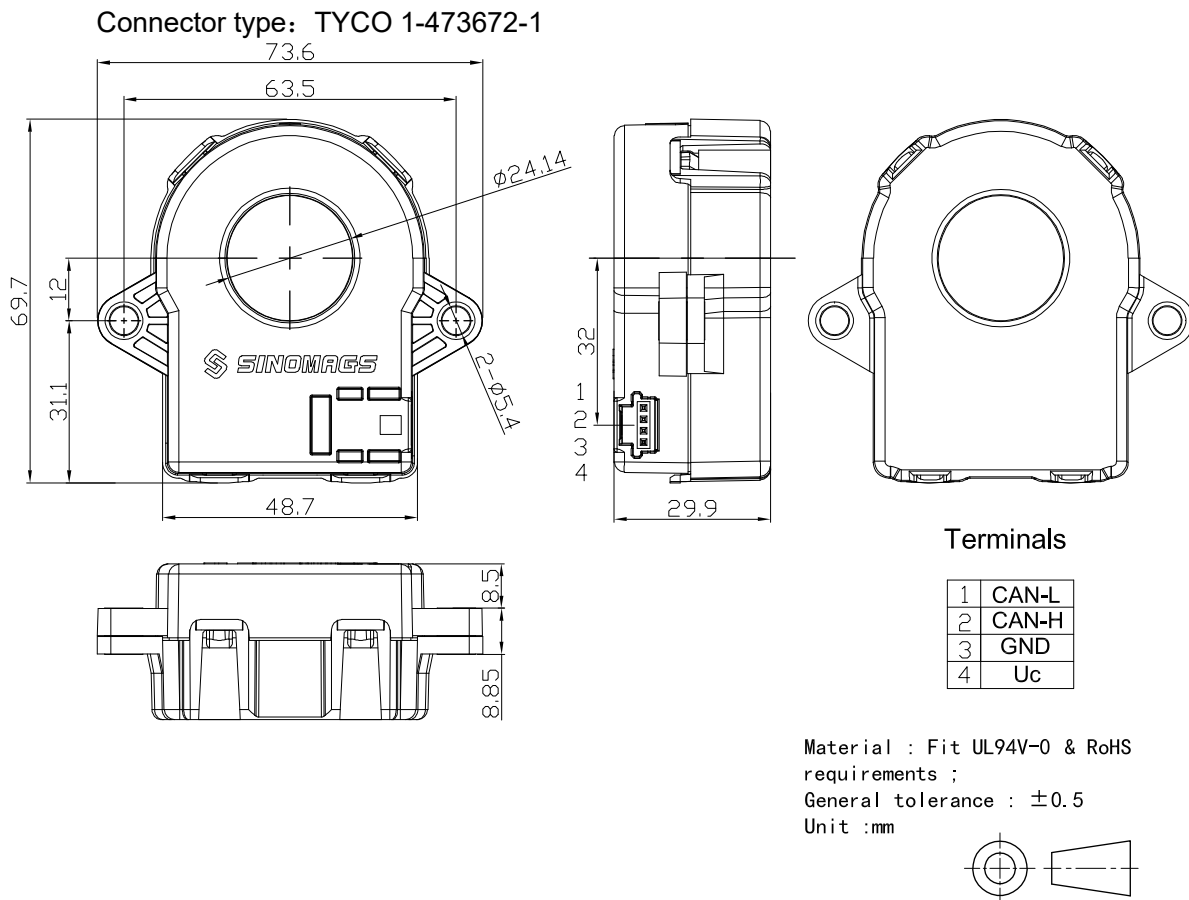
Status Power Supply signal



Analog Current signal



6. Dimensions: (in mm)



Mechanical characteristics

1. Unspecified tolerance: ± 0.5 mm
2. Mounting screw M5, torque max 3 Nm
3. Mass: 180 ± 5 g

7. Primary current direction



8. Application

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

9. Product definition statement

	STB	-	CAB	1500	N	-	5	2	C
Current sensor									
Product information									
Rated current									
Installing form									
N:	Perforation $\varnothing$ 24.2mm, mounting hole $\varnothing$ 5.4mm								
Baud rate									
1:	125k								
2:	250k								
5:	500k								
CAN ID									
1:	3C1								
2:	3C2								
3:	3C3								
4:	3C4								
5:	3C5								
9:	3C0								
Edition									
A~Z:	Customized version								