受 控
2026-04-08

SINOMAGS
希 磁 科 技

CURRENT SENSOR

PRODUCT SERIES: STB-CAB1500

PRODUCT PART NUMBER: STB-CAB1500N-xxC
STB-CAB1500N-xxCH

VERSION: Ver 2.2

Sinomags Technology Co., Ltd.

Web site: www.sinomags.com

CONTENT

1. Characteristic

CAB1500 Series current sensor is based on Sinomags Close Loop TMR and Open 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：	>= 500 MΩ；
Rms voltage for AC insulation test	50Hz 1min 2.5KV
Over-voltage(12V)	24V/1 minute
Over-voltage(24V)	36V/1 minute
Electrostatic discharge voltage	4KV

3. Electrical parameters

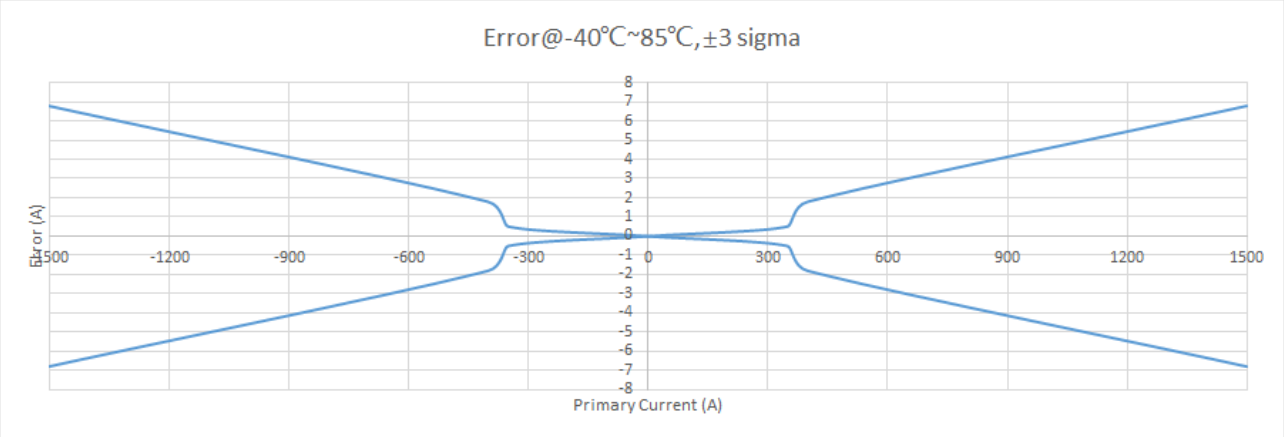
3.1 Supply Voltage UC =12V

Parameter	Symbol	Unit	Specification			Conditions
			Min	Type	Max	
Nominal Measuring Range	I_{PN}	A	-1550		1550	
Supply Voltage	U_C	V	6.8	12	18	Full accuracy
Current Consumption @I_P=0A	I_C	mA	27	32	37	U_C=12V, T=25˚C
Current Consumption @I_P=1500A	I_C	mA		260		U_C=12V, T=25˚C
Offset=0A	I_{OS}	A	-0.1		0.1	U_C=12V, T=25˚C
Offset=0A	I_{OS}	A	-0.15		0.15	T=-40 to 85˚C; ± 3 sigma
Accuracy error with I_{PN}≤±50A	ε_A	A	-0.2		0.2	T=-40 to 85˚C; ± 3 sigma
Linearity error with ±50A<I_{PN}≤±350A	ε_L	%	-0.4		0.4	T=-40 to 85˚C; ± 3 sigma
Linearity error with ±350A <I_{PN}<±1500A	ε_L	%	-0.7		0.7	T=-40 to 85˚C; ± 3 sigma
Temperature coefficient of G	TCG	ppm/˚C		20		

3.2 Supply Voltage UC =24V

Parameter	Symbol	Unit	Specification			Conditions
			Min	Type	Max	
Nominal Measuring Range	I_{PN}	A	-1550		1550	
Supply Voltage	U_C	V	7	24	32	Full accuracy
Current Consumption @I_P=0A	I_C	mA	26	31	36	U_C=12V, T=25℃
Current Consumption @I_P=1500A	I_C	mA		240		U_C=12V, T=25℃
Offset=0A	I_{OS}	A	-0.1		0.1	U_C=12V, T=25℃
Offset=0A	I_{OS}	A	-0.15		0.15	T=-40 to 85℃; ± 3 sigma
Accuracy error with I_{PN}≤±50A	ε_A	A	-0.2		0.2	T=-40 to 85℃; ± 3 sigma
Linearity error with ±50A<I_{PN}≤±350A	ε_L	%	-0.4		0.4	T=-40 to 85℃; ± 3 sigma
Linearity error with ±350A <I_{PN}<±1500A	ε_L	%	-0.7		0.7	T=-40 to 85℃; ± 3 sigma
Temperature coefficient of G	TCG	ppm/℃		20		

4. Total Error Graph for CAB-1500



5. CAB-1500 CAN Output specification

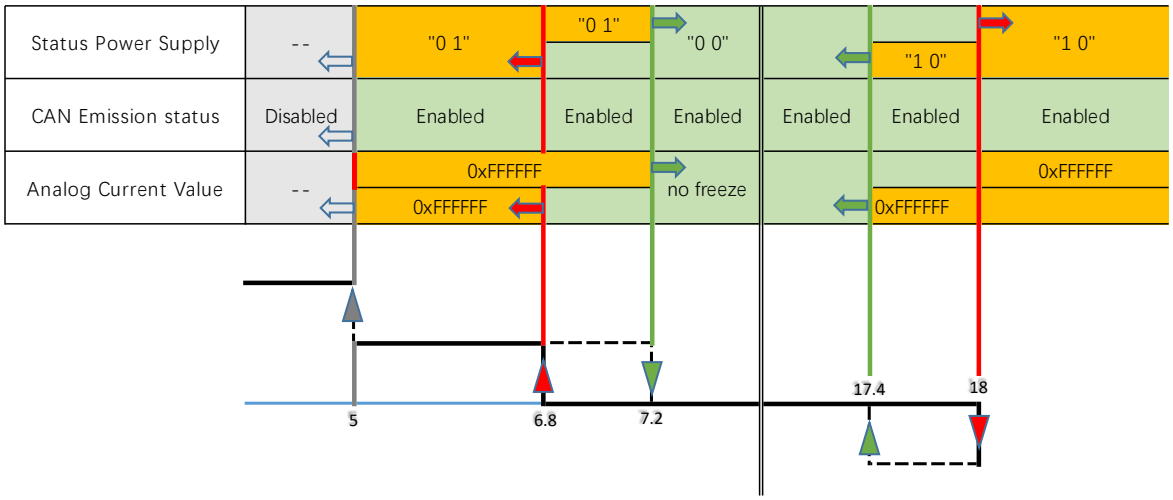
CANBUS speed refer to product version table,
CANBUS protocol: version 2.0A/B
CAN oscillator tolerance: 0.3125%
Byte order: big endian (Motorola)
120 ohm termination resistor to be added externally, internal CAN impedance = 4.8Kohm

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, 7FFFFFH= - 1mA, 800001H= 1mA	IP_VALUE	8	31
						b0:Error indication (0=Normal ,1=failure)	Error_indication	32	32
						b7-b1:Error information	Error_information	33	39
						Vacant bits (fix to 0)	PCBA Ver	40	47
							FirmWare Ver	48	55
							CRC	56	63

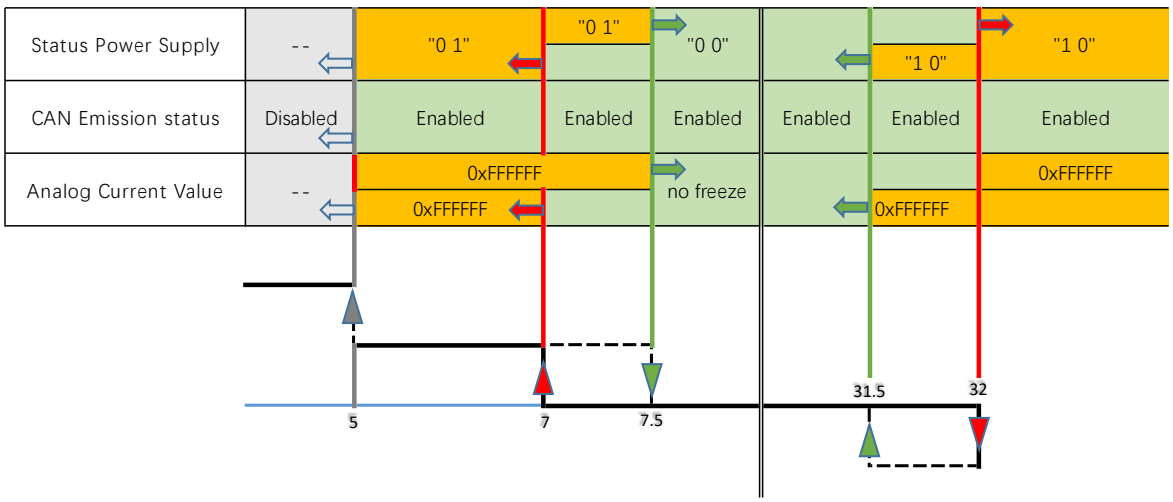
FAILLURE MODE	Ip VALUE	ERROR INDICATION	ERROR INFORMATION
Analog front-end error happens	0xFFFFFF	1	0x42
Calibration data error	0xFFFFFF	1	0x44
Analog front-end over range happens	0xFFFFFF	1	0x46

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							Error_indication
BYTE 5	PCBA Ver							
BYTE 6	Firmware Ver							
BYTE 7	CRC Ip							
	MSB							LSB

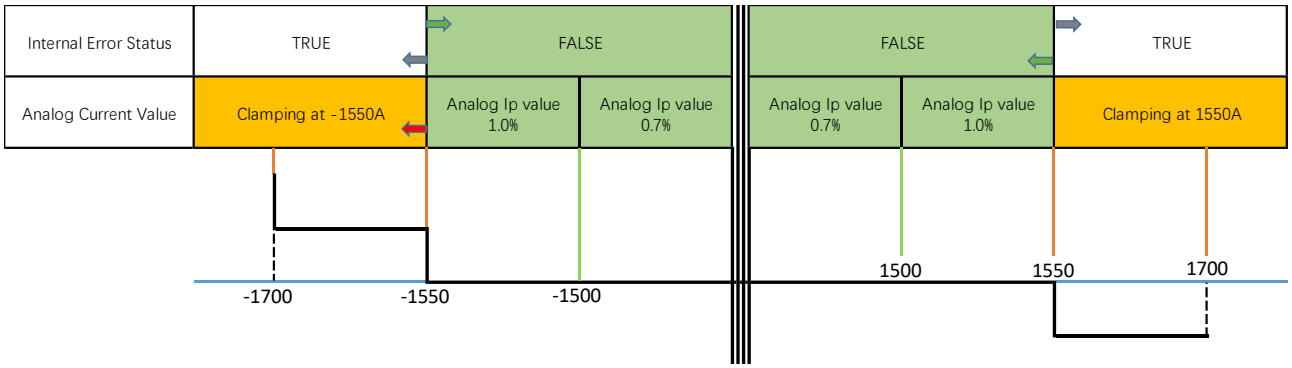
Status Power Supply Signal(12V)



Status Power Supply Signal(24V)

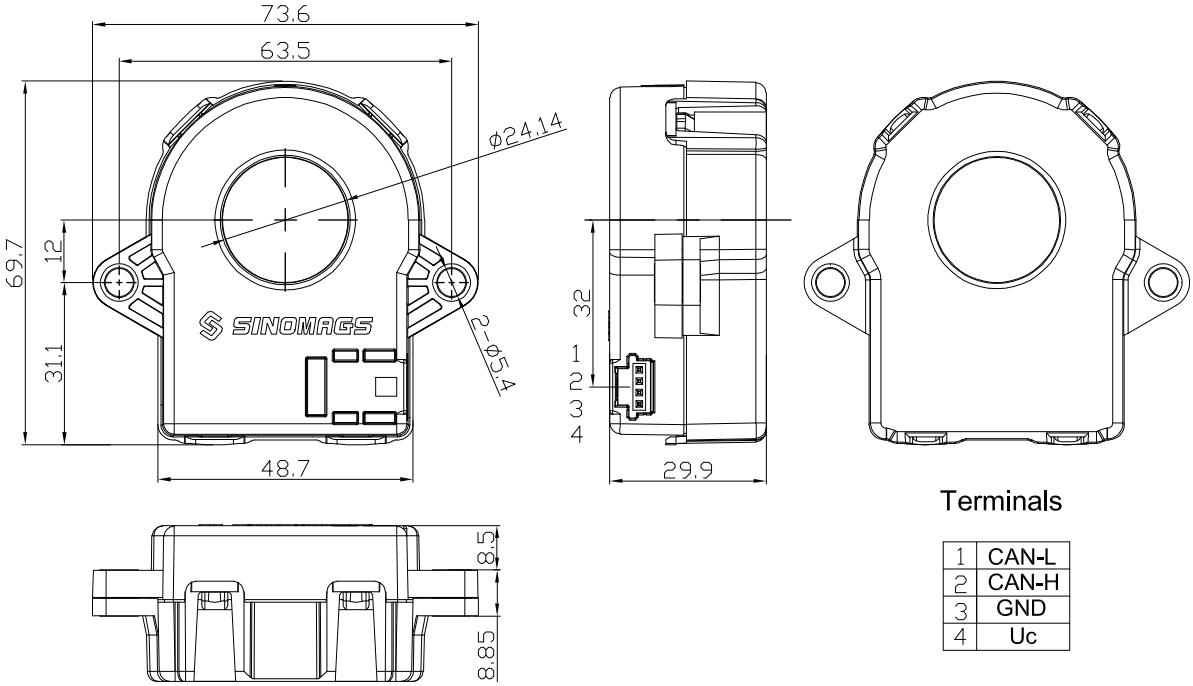


Analog Current Singnal



6. Dimensions：(in mm)

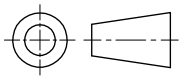
Connector type：TYCO 1473672-1



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

7. Primary current direction

8. Application

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

9. Product definition statement