AHBC-CANB500 Electricity sensor

Automotive-grade components are AEC-Q qualified

Introduction

The AHBC-CANB power sensor is a high-precision DC current sensor, which is mainly installed on the busbar of the battery pack to monitor the charging and discharging current. AHBC-CANB adopts fluxgate technology, which has the advantages of high precision and low hysteresis. The zero point bias current is less than 10mA. Due to the use of the fluxgate principle, there is no hysteresis effect, and it can still maintain low zero bias and high precision characteristics after 1000A high current impact. Therefore, it is especially suitable for power battery monitoring, high-precision current monitoring and other applications. Battery current monitoring and management system.

The fluxgate principle has an absolute technical advantage in the field of high-precision measurement. The continuous oscillation of the excitation magnetic field is equivalent to the degaussing magnetic field, thereby minimizing the hysteresis.

Item 4.2.4 of the national standard QCT 897-2011 stipulates that the SOC estimation accuracy requirement is not greater than 10%. In order to ensure this accuracy, the charging and discharging monitoring accuracy should be better than 1%. In order to ensure high-precision SOC under both large current and low current conditions, the full-scale accuracy of the sensor should be further improved by 0.3%. AHBC-CANB power sensor meets the accuracy requirements, and has smaller hysteresis and smaller zero offset。

Main features

Linear error<0.1%

Accuracy error<0.3%

Zero bias<10mA

+9V~+16V powered

Power protection function

High-speed CAN2.0B Interface

/RS485 interface

working temperature-40℃- 105℃

Typical application

Battery Management System for Electric Vehicles（BMS）

Battery Disconnect Unit（BDU）

Power Distribution Unit（PDU）

Industrial lithium battery energy management equipment

Industrial lithium battery energy management equipment

Charging pile

Standard parameters

parameter	symbol	unit	Specification			Remark
			Minimum	Typical	Maximum	
measurement range	I_{PM}	A	-550		550	
supply voltage	U_C	V	9	12	16	
Working current @IP=0A	I_C	mA		30		@UC=12V
Working current @IPM	I_C	mA		100		@UC=12V
Linearity error	L	%	-0.1		0.1	±3。Full temperature zone
Zero bias@IP= 0A	I_O	mA	-10		10	±3。Full temperature zone
Accuracy@IP=±40A	X_G	mA	-120		120	±3。Full temperature zone
Working temperature	T_A	℃	-40		105	
zero temperature drift	T_{off}	mA/K		0		
gain temperature drift	T_{gain}	ppm/K	70		70	±3。
output noise	Noise	mA	-10		10	

Limit parameter

parameter	symbol	unit	Specification	Remark
overvoltage	U_C	V	32	400 ms
overvoltage	U_C	V	24	1 minute
negative voltage	U_C	V	-50	1 minute
minimum working voltage	U_C	V	6	Continuous work, can not measure
maximum working voltage	U_C	V	18	Continuous work, can not measure
ESD	U_D	kV	2.5	50Hz,1minute
Protection class			IP56	

CANoutput

CAN2.0B

Baud Rate：250kpbs

Data mode: big endian mode

CAN Oscillator Tolerance：0.27%

External resistance：120Ω

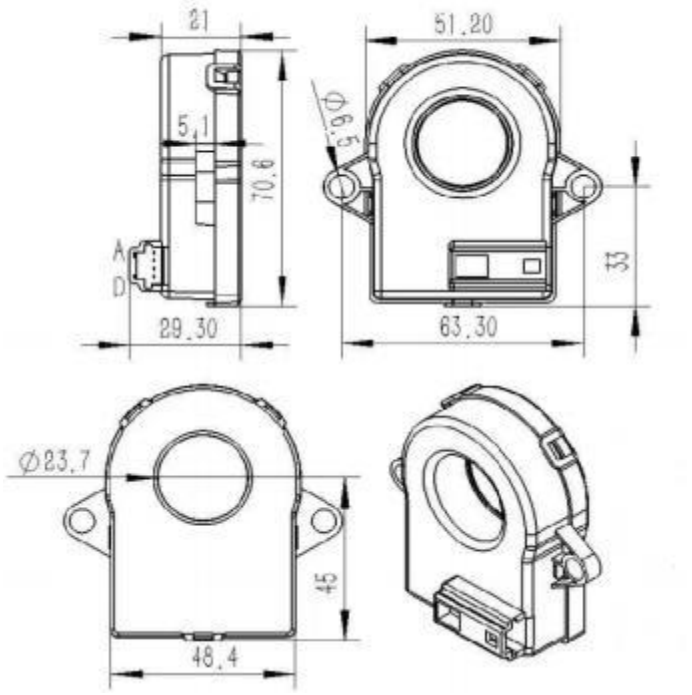
Data Format

Current	CAN ID	Name	Data Length	Type of Frame	Message Launch type	Signal Description	Signal Name	Start Bit	End Bit
Return Current I_P (mA)	3C2H	AHBC-CANB	8	Stand-ard	Cyclic tranceived message 10ms cycle	I_P Value: 80000000H = 0mA, 7FFFFFFFH=-1mA , 800000001=1mA	IP-VALUE	0	31
						B0:Error Information (0=Normal,1=failure)	ERROR INDICATION	32	39

Error message

error description	IP VALUE	ERROR INDICATION	ERROR INFORMATION
invalidation error	80000000H	1	41H

Mechanical Dimensions



Connector model is Tyco AMP 1473672。

PIN NO	Function
D	VCC
C	GND
B	CAN_H
A	CAN_L

Version

Version Name	CAN ID	CAN SPEED(kbps)
AHBC-CANB	3C2	250
AHBC-CANB	3C3	250