

HFCE-M08

FLUXGATE CURRENT SENSOR



File No.: 508



Features

- Total error 0.5% at(-40°C to 85°C)
- Total error 0.3% at(25°C)
- Offset below 10mA
- Fluxgate current sensor
- Unipolar +12V battery power
- Support for CAN 2.0B protocol

SCOPE OF APPLICATION

HFCE-M08 The family if for battery monitoring applications where high accuracy and very low offset are required. It offers galvanic separation primary circuit and the secondary circuit.

ELECTRICAL DATA (Ta=25°C)

Type	Sym	Min	Typ	Max
Supply voltage	U _c	8V	13.5V	16V
Current consumption @I _p =0A	I _c		30mA	40mA
Current consumption @I _p =500A	I _c			160mA
Ambient operating temperature	T _A	-40°C		85°C
Primary nominal DC or current rms	I _{PN}	-500A		500A
Current clamping value	I _{PM}	-530A		530A
Linearity error	ε _L		0.1%	
Output noise			±10mA	
Start-up time	t _{start}		150ms	
Seting time after over Load	t _{start}		20ms	

INSULATION COORDINATION

Parameter	Sym	Value
Insulation resistance	R _{INS}	>500MΩ
Insulation strength	V _d	2.5 kV(50HZ, 1minute)
Creepage distance	d _{cp}	7.2 mm
Clearance	d _{ci}	6.75 mm

RESIDUAL CURRENT RELATED CHARACTERISTICS

Parameter	Sym	Value	Conditions
Load-dump over-voltage	U _c	32	400ms
Over-voltage	U _c	24	1 minute
Reverse polarity	U _c	-16	1 minute
Minimum supply voltage	U _{cmin}	8	Continuous not operating
Maximum supply voltage	U _{cmax}	16	Continuous not operating



HONGFA CURRENT TRANSFORMER
ISO9001 CERTIFIED

2024 Rev. 1.00

CHARACTERISTICS

CAN Output specification

Parameter	Bit order	sleep mode	Termination resistor	CAN ID	CAN Speed	Data Length	Type of frame	Message launch type
CAN protocol 2.0 B	big endian (Motorola)	No sleep mode capability	120 ohms termination resistor to be added externally	0x3C2	500Kbps	8 bytes	Standard	Cyclic message period 10±1ms

CAN Output Message Frame

Message Description	Signal description	Start bit	End bit
IP Value: 80000000H=0mA 7FFFFFFFH=-1mA 80000001H=1mA	IP_VALUE	0	31
Error Info (1bit) 0=Normal; 1=Failure	ERROR INDICATION	32	32
CSM-FAIL (7bits)	ERROR_INFO	33	39
(16bits) 0x4D08	SENSOR_NAME	40	55
(8bits)Software Revision	SW_Revision	56	63

CAN Diagnostic Trouble code

Memory Error	Ip Value	Error Indication	Error Information
Memory Error	0x FFFF FFFF	1	0X40
Supply voltage out of range	0x FFFF FFFF	1	0X46
Fluxgate has no oscillation for more than 20 ms	0x FFFF FFFF	1	0X42
Hardware default ADC channel	0x FFFF FFFF	1	0X47

ORDERING INFORMATION

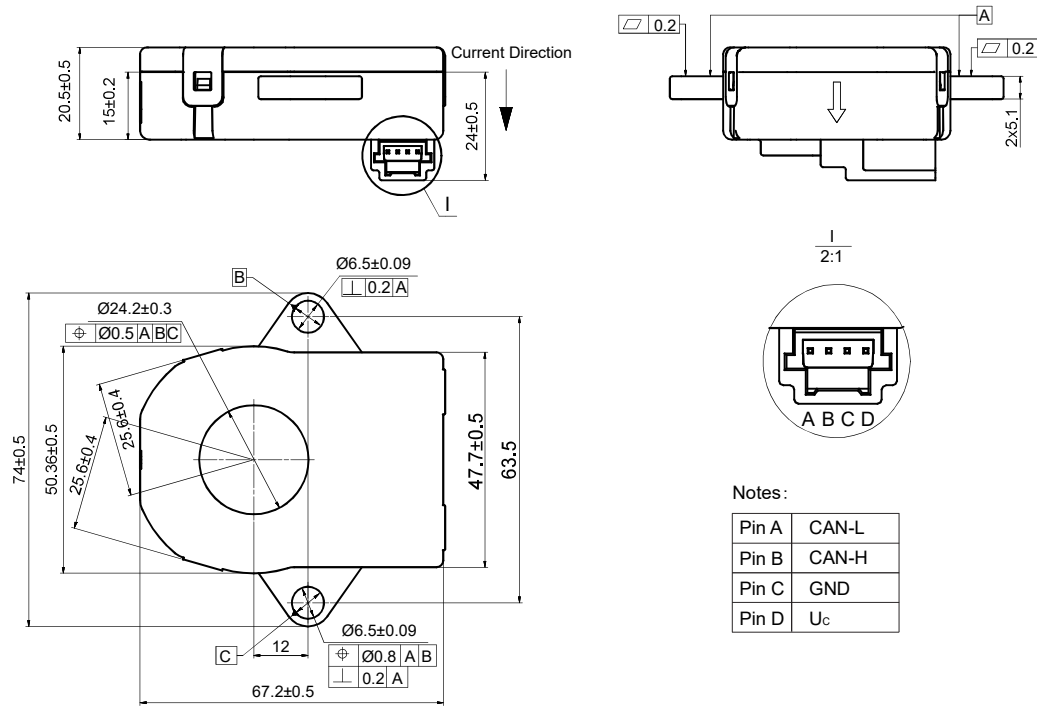
Product Part NO.	HFCF CF:Fluxgate current sensor	-M	08/	500	-T	S	<input type="checkbox"/>	(XXX)
Working Principle	M: Fluxgate sensor (for measurement)							
Sequence number	08: 08							
Nominal current	500: 500							
Output method	T: Communication signal							
Operating Voltage Mode	S: Single power supply							
Typical operating voltage	12: 12V 24: 24V							
Special code¹⁾	XXX: Customer special requirement							

Notes: 1) The customer special requirement express as special code after evaluating by Hongfa.

OUTLINE DIMENSIONS, WIRING DIAGRAM

Unit: mm

Outline Dimensions



Notes:

Pin A	CAN-L
Pin B	CAN-H
Pin C	GND
Pin D	U _c

NOTES:

- 1) To avoid using current transformer under strong magnetic field, the external magnetic field will cause the accuracy of current transformer to change.
- 2) We could not evaluate all the performance and all the parameters for every possible application field and environment. Thus the user should be in a right position to choose the suitable produce for their own application. If there is any query, please contact HKG for the technical service. However, it is the use's responsibility to determine which product should be used only.
- 3) Operating temperature range in this specification refers to the maximum tolerable temperature range under specific load conditions.
- 4) To maintain the performances of current transformers, please do not make the current transformer drop or be shocked strongly.
- 5) All the performance data listed in the datasheet are the initial values tested under standard testing condition.
- 6) HKG reserves the right to change the product, the customer should confirm this specification before placing the order for the first time, may request us to provide the new specification if necessary.