

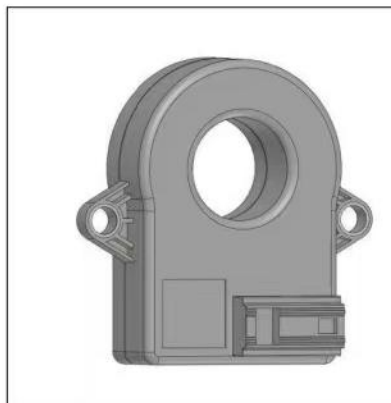
磁通门电流传感器 FSCAT500

FREESOR SERIES FLUXGATE CURRENT SENSOR

FSCAT系列电流传感器基于磁通门技术，不仅具有高精度和低偏置电流检测的能力，也具有高低压间隔离的特性。采用单电源供电方案，CAN总线输出，车规级产品设计，适用于新能源纯电动车、插电混动汽车、充电桩以及储能设备中的电流测量。

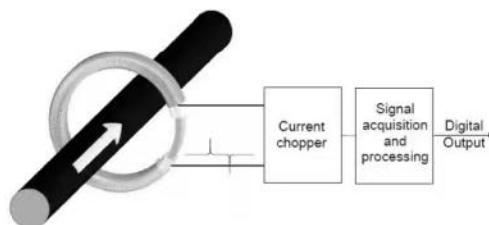
| 特征

- 面板装配
- 12V供电
- 输出信号：高速CAN（最高可达500kpbs）
- 可配置内部数字低通频率滤波器
- 可配置CAN速度和ID
- UL508兼容
- CE能力
- 防护等级：IP42级
- FSCAT500 内置120 ohm 电阻
- FSCAT500-B 外置120 ohm 电阻



| 优势

- 精度高：全温区 < 0.5%，常温 < 0.3%
- 小于10mA的偏置电流
- 低温漂
- 高隔离度
- 工作电压范围广
- 稳定CAN通讯
- 安装及使用兼容市场主流产品，易替换



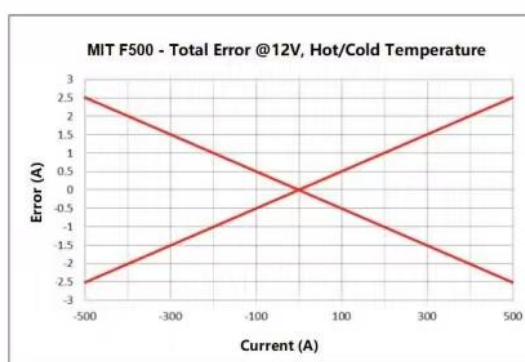
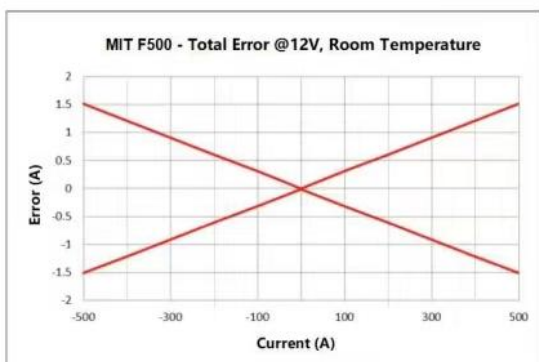
| 规格

■ 电气参数

Category	Parameters	Symbol	Unit	Min	Typical	Max
Basic	Supply voltage	Uc	V	8	12	16
	Start-up voltage	Uc	V	6		
	Current consumption @Ip=0A	Ic	mA		40	45
	Current consumption @Ip=500A	Ic	mA		140	160
	Ambient operation temperature	TA	°C	-40		85
Performance in operating	Primary nominal DC or RMS current	IPN	A	-500		500
	Current clamping value		A	-530		530
	Voltage clamping value Max@ Uc increases		V		18	
	Voltage clamping value Max@ Uc decreases		V		17.35	
	Voltage clamping value Min@ Uc increases		V		7.72	
	Voltage clamping value Min@ Uc decreases		V		7.27	
	Linearity error	εL	%		0.1	
	Output noise		mA		±10	
	Start-up time	Tstart	ms		20	
	Setting time after overload		ms		20	
Absolute max rating (not operating)	Load dump overvoltage	Uc	V		32	
	Over-voltage	Uc	V		24	
	Reverse polarity	Uc	V		-16	
	Minimum supply voltage	Uc min	V		6	
	Maximum supply voltage	Uc max	V		18	
	Creepage distance	dcp	mm		7.2	
	Clearance	dcl	mm		6.95	
	RMS voltage for AC insulation test	Ud	KV		2.5	
	Insulation resistance	Rins	Mohm		500	
	IP level				IP42	

■ 综合精度

Ip (A)	Total error @ 25 °C (A)	Total error @ T range (A)
-500	±1.5	±2.5
0	±0.01	±0.01
500	±1.5	±2.5



■ CAN输出

- CAN protocol 2.0B
- Bit order: big endian (Motorola)
- CAN oscillator tolerance: 0.3125%
- No sleep capability

Message Description	Can ID	Data length	Message launch type	Signal description	Signal name	Start bit	End bit
Return current Ip (mA)	0x3C2	8 bytes	Cyclic transmitted message 10ms cycle	Ip value: 8000000h=0mA 7FFFFFFh=-2mA 80000001h=1mA	IP_VALUE	0	31
				b0 error information 0=normal, 1=failure	ERROR_INDICATION	32	32
				b7 to b1: RxQuality (0 to 100%)	ERROR_INFORMATION	33	39
				fixed to 0	VACANT_DATA_2BYTES	40	55
				CRC-8 POLY: 8+X ² +X+1	CRC_8	56	63

■ 故障诊断

Failure Mode	I_P Value	Error Indication	Error Information
Overcurrent Detection $I_P > \text{Approximate } 580 \text{ A}$	0x FFFF FFFF	1	0x41
Fluxgate has no oscillation for more than 20 ms	0x FFFF FFFF	1	0x42
Clock deviation	0x FFFF FFFF	1	0x44
Supply voltage is out of range	0x FFFF FFFF	1	0x46

