



THE DATASHEET OF KG24



KG24ZCD24C-500A CAN

磁通门电流传感器 Fluxgate Current Sensor

本产品是采用磁通门技术,用于检测直流电流的数字传感器。测量方式为穿孔式,无插入损耗,孔径为 $\phi 24\text{mm}$ 。

This product is a digital sensor using fluxgate technology for detecting DC current. The measurement method is perforated, no insertion loss, and the aperture is $\phi 24\text{mm}$.



产品特点 Product characteristics	应用 Apply
<ul style="list-style-type: none"> ● 24V 单电源供电/24V single power supply ● 额定电流测量范围$\pm 500\text{A}$/Rated current measurement range $\pm 500\text{A}$ ● 工作温度范围: $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$/Working temperature range: $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$ ● 输出信号: 高速 CAN(500kbps)/Output signal: High speed CAN(500kbps) ● 在温度范围内 0.5%的综合误差/A combined error of 0.5% over the temperature range ● 在常温 25°C下 0.3%的综合误差/The combined error of 0.3% at room temperature 25°C ● 原副边隔离测量/Primary secondary side isolation measurement ● 连接器类型: TE/AMP 1473672-1/Connector type: TE/AMP 1473672-1 	<ul style="list-style-type: none"> ● 电池管理系统(SOC,SOH,SOF 等)的电流测量/Current measurement for battery management systems (SOC,SOH,SOF, etc.)

绝对最大额定值 Absolute maximum ratings

参数 parameter	符号 symbol	单位 unit	值 value	测试条件 Test condition
冲击电压 Impulse voltage	V_c	V	32	400ms
过电压 Over voltage	V_c	V	26.7	1min
负向耐压 Negative pressure resistance	V_c	V	-30	1min
爬电距离 Creepage distance	dcp	mm	7.2	
电气间隙 Electrical clearance	dci	mm	6.95	
绝缘电压 Insulation voltage	V_d	kV	2.5	@50HZ, AC, RMS, 2mA,1min

环境和机械特性 Environmental and mechanical characteristics

参数 parameter	标志 symbol	单位 unit	最小值 Minimum value	典型值 Typical value	最大值 Maximum value	备注 remark
工作温度 Operating temperature	TA	$^{\circ}\text{C}$	-40		85	

存储温度 Storage temperature	TS	°C	-40		105	
质量 Weight	m	g		80		
IP 等级 IP level	IP41					

电气参数 Electrical data(Ta=25°C±5°C)						
参数 parameter	标志 symbol	单位 unit	最小值 Minimum value	典型值 Typical value	最大值 Maximum value	测试条件 Test condition
额定输入电流 Rated input current	I _{pn}	A	-500	-	500	-
测量电流范围 Measuring current range	I _{pm}	A	-530	-	530	-
供电电源电压 Supply voltage	V _c	V	22.8	24	25.2	-
电源消耗电流 Power supply consumption current	I _c	mA	-	35	50	@25°C, V _c =24V, IP=0A
电源消耗电流 Power supply consumption current	I _c	mA	-	65	80	@25°C, V _c =24V, IP=500A
线性度误差 Linearity error	ε	%FS	-0.1	-	0.1	@25°C
噪声电流 Noise current	I _{oe}	mA	-10		10	@I _p =0, T _A =25°C
温漂 Temperature drift	T _C	ppm/°C		70		T _A = -40~85°C

综合误差 Combined error	温度 temperature	
I _p (A)	@25°C	@-40~85°C
0	±0.01	±0.01
10	±0.05	±0.07
300	±0.9	±1.5
400	±1.2	±2
500	±1.5	±2.5

CAN 输出规格 CAN output specification

CAN 接口特征:

CAN interface features:

CAN 协议: 2.0B 版本/CAN protocol: version 2.0B

字节顺序/Byte order: 大端序(Motorola)

CAN 振荡器容差: 0.27%/CAN oscillator tolerance: 0.27%

无休眠能力/indormancy

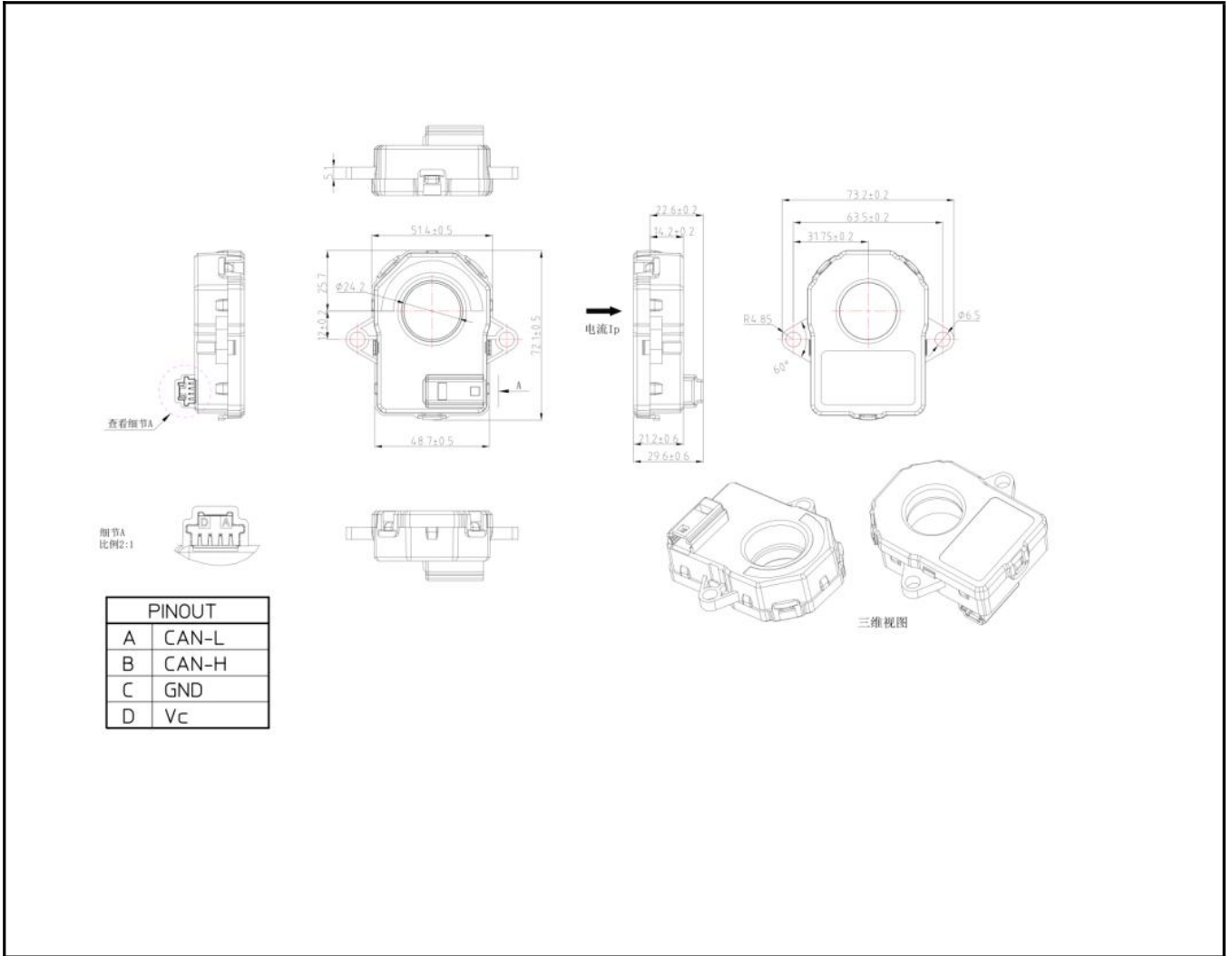
外部添加 120 欧姆终端电阻, 内部 CAN 阻抗=2.4kohm/Add 120 ohm terminal resistance externally and CAN impedance =2.4kohm internally

信息描述 Information description	CAN 序号 CAN sequence number	名称 name	数据长度(Nb字节) Data length (Nb Bytes)	框架 类型 Frame type	信息启动类型 Message initiation type
返回电流 IP(mA) Return current IP(mA)	0x3C2	SG 500_IP	8	标准 Standard	循环收发消息 10ms 周期 The interval for sending and receiving messages is 10ms

信号描述 Signal description	信号名称 Signal name	开始字节 Start byte	长度 Length
IP 值/IP value: 8000000H=0mA 7FFFFFFFH=1mA 80000001H=1mA	IP 值 IP value	24	32
错误信息(1 字节)(0: 正常, 1: 错误) Error message (1 byte)(0: normal, 1: error)	错误提示 Error prompt	32	1
故障错误(7 字节) Fault error (7 bytes)	错误信息 Error message	33	7
SG 500(24 字节) SG 500(24 bytes)	传感器名字 Sensor name	48	16

故障管理 Fault management			
故障模式 Failure mode	IP 值 IP value	错误提示 Error prompt	错误信息 Error message
内存错误 Memory error	0x FFFF FFFF	1	0X40
过电流检测 IP>580A Overcurrent detection IP>580A	0x FFFF FFFF	1	0X41
磁通门在 20 毫秒以上没有振荡 The fluxgate does not oscillate for more than 20 milliseconds	0x FFFF FFFF	1	0X42
时钟偏差 Clock deviation	0x FFFF FFFF	1	0X44
电源电压超出范围 The power supply voltage is out of range	0x FFFF FFFF	1	0X46
硬件默认 ADC 通道 Hardware default ADC channel	0x FFFF FFFF	1	0X47
新数据不可用 New data is not available	0x FFFF FFFF	1	0X49
硬件默认 DAC 阈值 Default hardware DAC threshold	0x FFFF FFFF	1	0X4A
硬件默认参考电压 Default hardware reference voltage	0x FFFF FFFF	1	0X4B

结构参数 Dimensions(mm)



产品选型表

	KG	24	Z	C	D24	C	500A	- 2	5	3
产品系列										
结构编号, 孔径24mm										
默认电流方向										
连接器规格										
供电电源										
D12										
D24										
通讯协议										
C										
S										
额定电流										
CAN ID										
1										
2										
3										
.....										
8										
9										
通讯速率										
1										
2										
5										
CAN 发送帧频率										
1										
2										

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