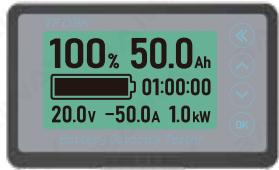


TF03K库仑计
TTL串口 / RS485 通讯说明



BAIWAY

V1.1

● 通讯协议 V2.0

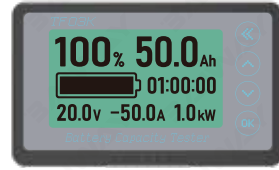
波特率：19200bps
字节数：16字节/次
发送间隔：1秒/次 仅在库仑计工作状态下(当前电流>背光开启电流)
接口电平：TTL电平 5V
隔离方式：光耦隔离+隔离电源模块
接收命令：暂无（批量客户可根据要求增加）
校验和：第1-15字节的8位累加和

字节编号:	1	2	3	4	5	6	7	8
数值名称:	索引字节	容量百分比	电池组总电压 (V)	当前电池容量 (mAh)				
Hex数值:	A5	02	07	D0	00	00	0A	87
举例说明:	A5	0x02=2%	0x07D0=2000=20.00V	0x0000 0A87= 2695mAh=2.695Ah				
数值范围:	A5	0 ~ 100%	0 ~ 500.00V	0.1Ah ~ 5000Ah				

字节编号:	9	10	11	12	13	14	15	16
数值名称:	电流 (mA)				剩余时间 (秒)			校验和
Hex数值:	00	00	24	05	00	94	11	XX
举例说明:	0x0000 2405=9221mA=9.221A				0x00 9411=37905秒=10:31:45			1-15字节的8位累加和
数值范围:	-750000mA ~ +750000mA(负值为补码)				00:00:00 ~ 99:59:59			

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TF03K Coulometer
TTL Serial Port / RS485
Communication Instruction



BAIWAY

V1.1

● Communication Protocol V2.0

Baud rate : 19200bps
Bytes : 16 bytes each time
Sending Interval: One second per time Only send when coulometer working(Current current>backlight on current)
Interface level: TTL level 5V
Isolation method: Optocoupler isolation + power module Isolation
Receive command: None (Batch customers can increase upon request)
Check sum: 8 bit cumulative sum from the first byte to fifteenth byte

Byte no.:	1	2	3	4	5	6	7	8
Name:	Index bytes	Capacity percentage	Total voltage of battery park (V)	Current battery capacity (mAh)				
Hex:	A5	02	07	D0	00	00	0A	87
Example:	A5	0x02=2%	0x07D0=2000=20.00V	0x0000 0A87= 2695mAh=2.695Ah				
Range:	A5	0 ~ 100%	0~500.00V	0.1Ah~5000Ah				

Byte no.:	9	10	11	12	13	14	15	16
Name:	Current (mA)				Remaining time (s)			Check sum
Hex:	00	00	24	05	00	94	11	XX
Example:	0x0000 2405=9221mA=9.221A				0x00 9411=37905S=10H:31M:45S			
Range:	-750000mA ~ +750000mA (Negative value are complements)				00:00:00 ~ 99:59:59			

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● TTL Serial Port Communication Function

The serial port of this product is TTL232, not RS232, and can not be connected with the RS232 of the computer host!
At present, the communication output of this product is only valid for TXD, RXD has no receiving function, so it can be disconnected.
GND(G) must be connected reliably. If the distance is long, it is recommended to connect the shielded cable and The shielding layer is connected to GND(G).
VCC(V) is an isolated power supply of 5V. If the connected device has a 3V or 5V power supply, it can be disconnected.
When the VCC of this product is connected to the outside, the power supply capability is limited, and must be control it below 10mA, otherwise it may cause the internal temperature of this product to overheat!

● RS485 Communication Function

This product can be equipped with R485 communication function, which can be connected to A, B and GND shielding layer through twisted pair cables. (120Ω terminal resistance has been connected inside the product)

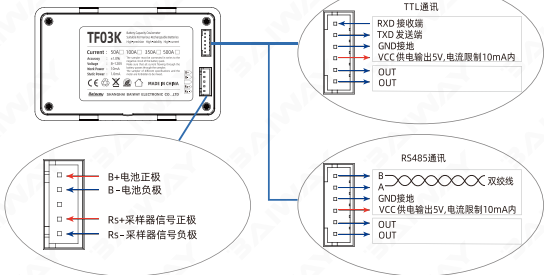
● Output Function

Output withstand voltage : 60VDC ,40VAC,AC/DC general purpose
Output current: 0.5ADC
Isolation method: Bidirectional Solid-state Optocoupler(Isolated withstand voltage 1500V)
Output method: In the state of charge, discharge or dormancy, if a low voltage alarm occurs,output conduction.In the state of discharge or dormancy,if a low capacity alarm occurs,output conduction, Except charging.

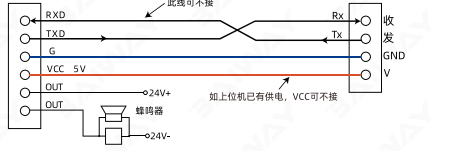
The output is an optocoupler isolation point, with a maximum withstand voltage of 60V and a maximum current of 1A. Please do not connect voltage and current exceeding the above limits. If the relay coil is connected, it is necessary to add reverse diode D to prevent the inductive back voltage from breaking down the optical isolation device.
Can be connected to a buzzer for alarm reminder.
It can be connected to the positive and negative pole circuits of the battery pack or other power supply circuits,but cannot be connected to the AC 220V circuit!

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TF03K显示表背面示意图



TF03K 上位机(被连接设备)



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● TTL串口通讯功能

本产品串口形式为 TTL232, 非 RS232, 不能和电脑主机的 RS232 进行连接!
目前本产品通讯输出仅 TXD 有效, RXD 没有接收功能, 可以不接。
GND(G) 必须要可靠连接, 距离较长建议使用屏蔽线、屏蔽层接 GND(G)。
VCC(V) 为隔离供电 5V, 如被连接设备具有 3V 或 5V 的电源时, 可不接。
当本产品的 VCC 连接到外部时, 供电能力有限, 务必控制在 10mA 以下, 否则可能引起本产品内部温度过热!

● RS485通讯功能

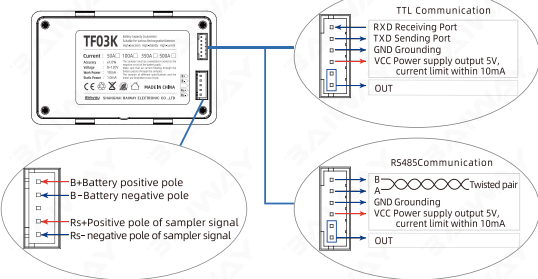
本产品可选配R485通讯功能, 可通过双绞线连接A B和GND屏蔽层。(产品内部已经连接120Ω终端电阻)

● 输出功能

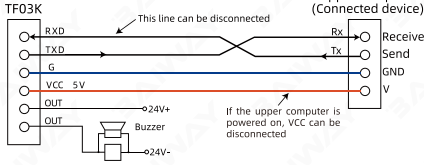
输出耐压: 60VDC,40VAC,交直流通用
输出电流: 0.5ADC
隔离方式: 双向固态光耦(隔离耐压1500V)
输出方式: 在充电或休眠状态下, 如发生低电压报警则输出导通。
在放电或休眠状态下, 如发生低容量报警则输出导通;在充电时输出不会导通。
输出为光耦隔离点, 最大耐压 60V, 最大电流 1A。请勿连接超过以上极限的电压和电流。
如连接继电器线圈, 需要加反向二极管 D, 以防止电感反压击穿光隔离器件。
可连接蜂鸣器进行报警提醒;
可接入电池组的正负极回路或其它电源回路, 不能接入交流 220V 回路!

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The diagram of back of TF03K Coulomber



TF03K 上位机(Connected device)



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