

# CAN PMU

高精度电压电流检测模块产品说明书

High precision voltage and current detection module  
product manual

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**CUAI**

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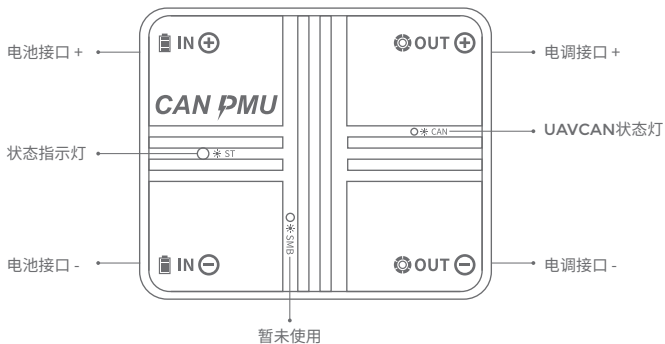
## 欢迎使用CAN PMU产品!

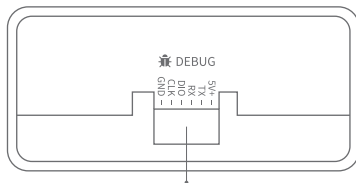
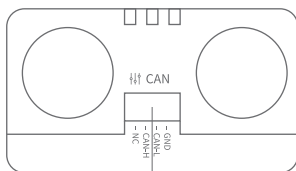
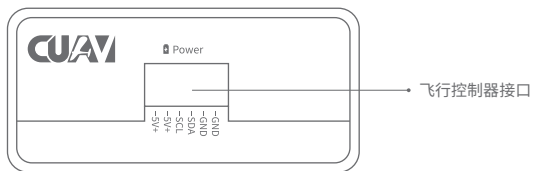
使用前请先阅读本说明!

### 功能概述

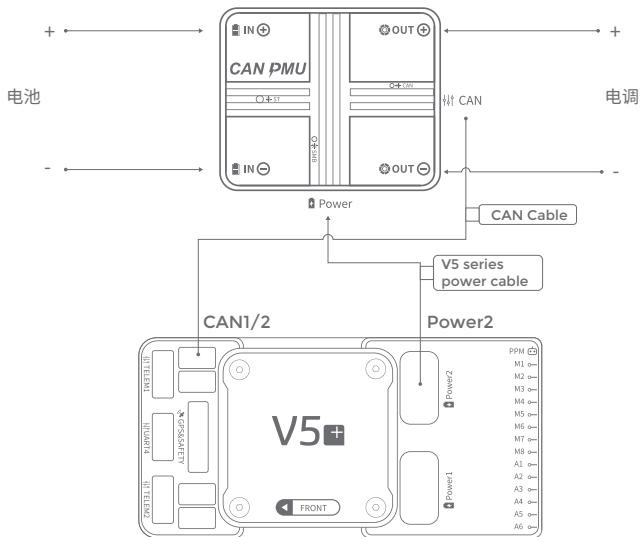
CAN PMU是一款无人机电源管理单元模块,内置STM32F4处理器,运行CUAV ITT算法,可以实时准确测量无人机电压和电流,最大支持6-62V电压和110A电流,并且可以输出5.4V 8A给飞行控制器供电,采用CAN总线方式通讯,支持标准UAV CAN协议,每个PMU单元均经过工厂校准,保证良好的一致性和高准确性。

### 接口定义





## CAN PMU连接示意图



## 软件设置

### ArduPilot固件(飞行控制器的固件)

在Mission planner的全部参数表设置以下参数并在写入后重启:

- CAN\_P1\_DRIVER=1
- CAN\_P2\_DRIVER=1
- BATT\_MONITOR=8 (如果使用监视器1)

注意:请使用AC3.6/AP3.9(含)以上版本的固件

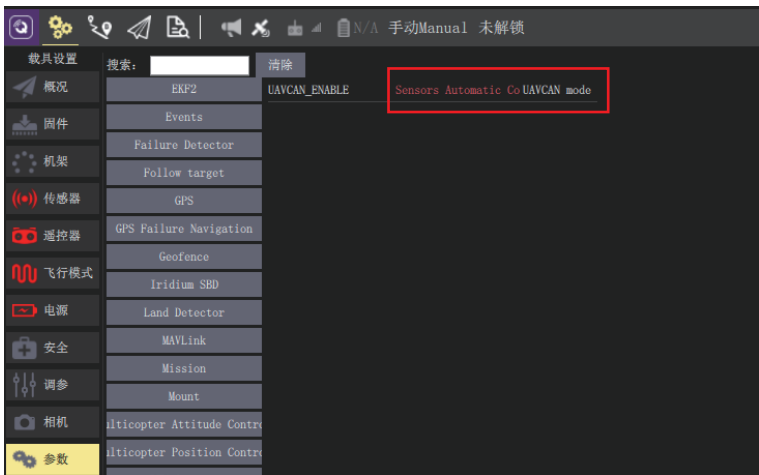
Advanced Params	CAN_P1_BITRATE	1000000		10000 1000000	Bit rate can be set up to from 10000 to 1000000
User Params	CAN_P1_DRIVER	1		0 Disabled 1 First driver 2 Second driver	Enabling this option enables use of CAN buses.
Full Parameter List	CAN_P2_BITRATE	1000000		10000 1000000	Bit rate can be set up to from 10000 to 1000000
Full Parameter Tree	CAN_P2_DRIVER	1		0 Disabled 1 First driver 2 Second driver	Enabling this option enables use of CAN buses.
Planner	CAN_SLCAN_CPORT	1		0 Disabled 1 First driver 2 Second driver	CAN Driver ID to be routed to SLCAN, 0 means no routing
BATT_MONITOR	8			0 Disabled 3:Analog Voltage Only 4: Analog Voltage and Current 5: Solo 6: Bebop 7: SMBus-Maxwell 8: UAVCAN-BatteryInfo 9: BLHeli ESC 10: SumOfFollowing 11: FuelFlow 12: FuelLevelPWM	Controls enabling monitoring of the battery's voltage and current

### PX4固件(飞行控制器的固件)

在QGroundControl参数列表中设置以下参数并在写入后重启:

- Uavcan\_enable设置为sensors Automatic config(自动配置)

注意:PX4固件在1.10或更高版本中支持UAVCAN电源检测模块



## 规格参数

### 基本参数

处理器	STM32F412 100Mhz 512K Flash 256K RAM
输入电压	6-62V(2-15S)
最大电流	110A
电压准确度*	±0.05V
电流准确度	±0.1A
分辨率	0.01A/V

最大输出功率	6000W/90S
最大稳定输出功率	5000W
稳压输出(Power)	5.4V/5A(瞬时8A/120s,可持续5A)
通信协议	UAVCAN
工作温度	-20°C ~ +100°C
固件升级	支持
校准设置	工厂校准,用户无需校准

### 接口类型

IN/OUT	XT90(线材端)/Amass 8.0(模块端)
Power	5025850670
CAN	GHR-04V-S

### 产品外观

尺寸	46.5mm×38.5mm×22.5mm
重量	76g

### 配件清单

CAN PMU模块	X1
电池连接线	X1
电调连接线	X1
V5系列飞控电源线	X1
Pixhack系列飞控电源线	X1
CAN连接线	X1

## 注意事项

- 请仔细阅读产品的使用说明书
- 连接电池前, 请仔细检查连线
- 请在额定的电压、电流、功率下使用
- 请阅读文档中心进行配置和使用
- 严禁自行拆装

## 固件升级

固件升级教程请访问CUAV文档中心: <http://doc.cuav.net>

## 更多资料

关于产品的更多信息, 请访问CUAV官方文档中心: <http://doc.cuav.net>  
及官方网站: <http://www.cuav.net>



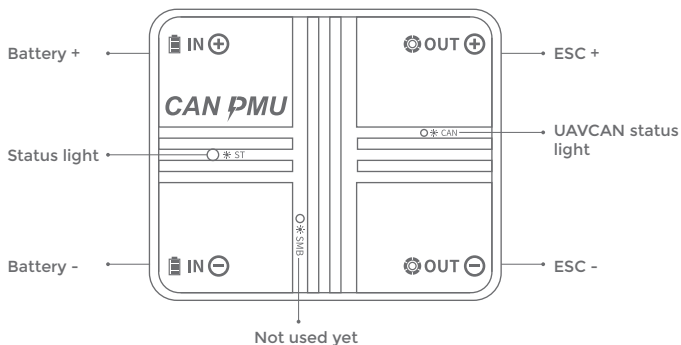
## Thank you for choosing CAN PMU !

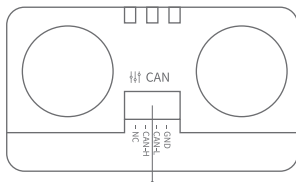
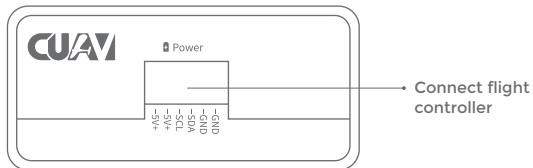
Please read this guide before using!

### Functions overview

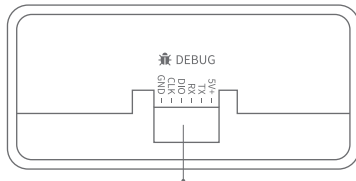
CAN PMU is a UAV power management unit module with built-in STM32F4 processor and running CUAV ITT algorithm. It can accurately measure UAV voltage and current in real time. It can support 6-62V voltage and 110A current at maximum, and can output 5.4V 8A. The flight controller is powered by CAN bus communication and supports the standard UAV CAN protocol. Each PMU unit is factory calibrated to ensure good consistency and high accuracy.

### Interface definition



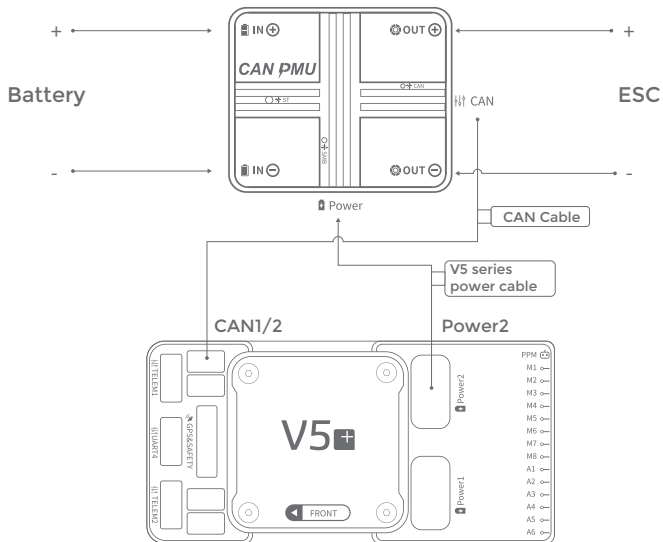


UAVCAN communication serial port



Factory debugging calibration interface  
users do not need to use

## CAN PMU connection schematic diagram



## Software settings

### ArduPilot firmware (flight controller firmware)

Set the following parameters in the Mission planner's full parameter list and restart after writing:

- CAN\_P1\_DRIVER=1
- CAN\_P2\_DRIVER=1
- BATT\_MONITOR=8 (If using monitor 1)

Note: Please use the firmware of AC3.6/AP3.9 (included) or higher.

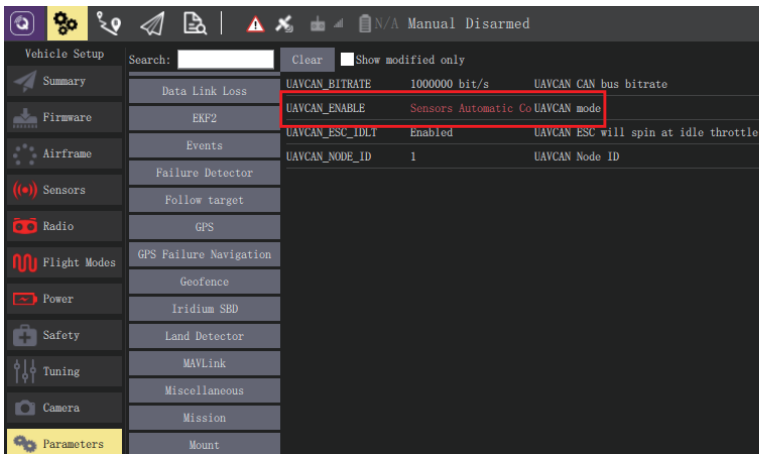
Advanced Params	Parameter	Value	Default	Description
User Params	CAN_P1_BITRATE	1000000	10000 1000000	Bit rate can be set up to from 10000 to 1000000
	CAN_P1_DRIVER	1	0 Disabled 1 First driver 2 Second driver	Enabling this option enables use of CAN buses.
Full Parameter List	CAN_P2_BITRATE	1000000	10000 1000000	Bit rate can be set up to from 10000 to 1000000
Full Parameter Tree	CAN_P2_DRIVER	1	0 Disabled 1 First driver 2 Second driver	Enabling this option enables use of CAN buses.
Planner	CAN_SLCAN_CPORT	1	0 Disabled 1 First driver 2 Second driver	CAN Driver ID to be routed to SLCAN, 0 means no routing
BATT_MONITOR	8		0 Disabled 3 Analog Voltage Only 4 Analog Voltage and Current 5 Solo 6 Bebop 7 SMBus-Maxwell 8 UAVCAN-BatteryInfo 9 BLHeli ESC 10 SumOfFollowing 11 FuelFlow 12 FuelLevelPWM	Controls enabling monitoring of the battery's voltage and current

### PX4 firmware (flight controller firmware)

Set the following parameters in the QGroundControl parameter list and restart after writing:

- Uavcan\_enable set to sensors Automatic config

Note: PX4 firmware supports UAVCAN power detection module in 1.10 or higher.



## Specifications

### Basic parameters

Processor	STM32F412 100Mhz 512K Flash 256K RAM
Voltage input	6-62V(2-15S)
Max current	110A
Voltage accuracy	±0.05V
Current accuracy	±0.1A
Resolution	0.01A/V

Max output power	6000W/90S
Max stable power	5000W
Power port output protocol	5.4V/5A(Instant 8A/120s, sustainable 5A) UAVCAN
Operating temp	-20°C ~ +100°C
Firmware upgrade	Support
Calibration	No need

### Interface Type

IN/OUT	XT90(Cable end)/Amass 8.0(Module end)
Power	5025850670
CAN	GHR-04V-S

### Appearance

Size	46.5mm×38.5mm×22.5mm
Weight	76g

### Packing List

CAN PMU module	X1
Battery cable	X1
ESC cable	X1
V5 series power cable	X1
Pixhack series power cable	X1
CAN cable	X1

## Notes

- Please read the product manual carefully.
- Please check the connection carefully before connecting the battery
- Please use at rated voltage, current and power
- Please read the documentation center for configuration and use
- Do not disassemble

## Firmware upgrade

Please visit the CUAU Documentation Center for a firmware upgrade tutorial:  
<http://doc.cuav.net>

## More info

For more information on the product, please visit the CUAU Official Documentation Center:<http://doc.cuav.net>  
And official website:<http://www.cuav.net>



[www.cuav.net](http://www.cuav.net)