

# PYLON

## CANBUS Protocol

### Version History

Date	Version	Chapter	Remark	Author
2016/11/03	1.0		我司协议 BMS Protocol_CAN_20161103, 视为 1.0 版本	
2017/11/14	1.1	0x359 0x35C	1、修正协议描述错误, 0-bit1 应为过压保护。 Modified wrong description of byte 0 bit 1 2、修改排版, 提高可读性, 增加协议内容解释。 Add assistant note. 3、增加强充标志 2 Add force charge bit4	王万祥 王中鹤
2018/04/08	1.2	0x35C	1、增加满充请求标志 Add full charge bit3	王亚坤 王中鹤

#### CAN 总线规格 CAN Bus:

采用标准帧，速率:500kbps，数据发送周期 1s。

Use standard frame, communication rate: 500kbps, data transmission cycle: 1s.

逆变器每秒回复数据:

Inverter reply every second: 0x305: 00-00-00-00-00-00-00-00

**Little endian.**

CAN ID: 0x359

Byte 0	Protection	Table 1	
Byte 1	Protection	Table 2	
Byte 2	Alarm	Table 3	
Byte 3	Alarm	Table 4	
Byte 4	Module numbers		8 bits unsigned char
Byte 5	"P"	0x50	
Byte 6	"N"	0x4E	
Byte 7	-		

Table 1

Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit 0
Discharge over current			Cell under temperature	Cell over temperature	Cell or module under voltage	Cell or module over voltage	

Table 2

Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit 0
				System error			Charge over current

Table 3

Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit 0
Discharge high current			Cell low temperature	Cell high temperature	Cell or module low voltage	Cell or module high voltage	

Table 4

Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit 0
				Internal communication fail			Charge high current

CAN ID: 0x351

Byte 0	Battery charge voltage	Unit: 0.1V	16 bits unsigned int
Byte 1	建议充电电压		

Byte 2	Charge current limit	Unit: 0.1A	16 bits signed int, 2`s complement
Byte 3	充电限流		
Byte 4	Discharge current limit	Unit: 0.1A	16 bits signed int, 2`s complement
Byte 5	放电限流		
Byte 6			
Byte 7			

#### CAN ID: 0x355

Byte 0	SOC of single module or average value of system	Unit: 1%	16bit unsigned int
Byte 1			
Byte 2	SOH of single module or average value of system	Unit: 1%	16bit unsigned int
Byte 3			
Byte 4			
Byte 5			
Byte 6			
Byte 7			

#### CAN ID:0x356

Byte 0	Voltage of single module or average module voltage of system 单模块的电压或系统平均电压	Unit: 0.01V	16 bits signed int, 2`s complement
Byte 1			
Byte 2	Module or system total current 单台或系统总电流	Unit: 0.1A	16 bits signed int, 2`s complement
Byte 3			
Byte 4	Average cell temperature 电芯平均温度	Unit: 0.1℃	16 bits signed int, 2`s complement
Byte 5			
Byte 6			
Byte 7			

#### CAN ID: 0x35C

Byte 0	Request flag	Table 5	
Byte 1			

Table 5

Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit 0
Charge enable	Discharge enable	Request force charge I* 强充标记 1	Request force charge II* 强充标记 2	Request full charge** 满充标记			

\*For US2000B: Please use bit 5, the SOC range is: 15~19%. Bit 4 is NULL.

\*For US2000B-Plus: Bit 5 the SOC range is 5~10%,

Bit 4 the SOC range is 9~13%.

Bit 5 is designed for inverter allows battery to shut down, and able to wake battery up to charge it.

Bit 4 is designed for inverter doesn't want battery to shut down, able to charge battery before shut down to avoid low energy. We suggest inverter to use this bit,

In this case, inverter itself should set a threshold of SOC: after force charge, only when battery SOC is higher than this threshold then inverter will allow discharge, to avoid force charge and discharge status change frequently.

**\*\*Request full charge:**

Reason: when battery is not full charged for long time, the accumulative error of SOC calculation will be too high and may not able to be charged or discharged as expected capacity.

Logic: if SOC never higher than 97% in 30 days, will set this flag to 1. And when the SOC is  $\geq 97\%$ , the flag will be 0.

How to: we suggest inverter to charge the battery by grid when this flag is 1.

CAN ID: 0x35E

Byte 0	Manufacturer Name	PYLON	ASCII
Byte 1			