BMS Protocol (CAN)

For Li Residential Series

Ver: 1.0 Updated on Jan 6, 202

1. The introduction of CAN Communication Protocol

The Frame Type of CAN Protocol of Li Battery adopted is CAN 2.0B Standard Frame.
The Communication Rate is 500kb/s.
Byte order: little endian
Meanwhile, the Inverter should send CANID 0x305:00 00 00 00 00 00 00 00 to BMS every second.

2. The definition of Frame from BMS

CAN ID: 0x359,Transmission Cycle is 1s.

	bit7	bit6	bit5	bit4	bit3	bit2	bit1	bit0	
Data0	Battery High Current Discharge			Battery Low Temp	Battery High Temp	Battery Low Voltage	Battery high Voltage	SUB Rely Command Alarm	Alarm
Data1				Cell Imbalance	BMS Internal			Battery High Current Charge	
Data2	Battery High Current Discharge			Battery Low Temp	Battery High Temp	Battery Low Voltage	Battery high Voltage		Warn
Data3		SUB Pack2 Error	SUB Pack1 Error	Cell Imbalance	BMS Internal			Battery High Current Charge	
Data4	Reserved								
Data5	Reserved								
Data6	Reserved								
Data7	Reserved								

CAN ID: 0x351,Transmission Cycle is 1s.

	bit7	bit6	bit5	bit4	bit3	bit2	bit1	bit0
Data0	Battery Charge Voltage							
Data1	(data type: 16 bit unsigned int, byte order: little endian, scale factor: 0.1, unit: V)							
Data2	DC Charge Current Limitation							
Data3	(data type: 16 bit unsigned int, 2's complement, byte order: little endian, scale factor: 0.1, unit: A)							
Data4	DC Discharge Current Limitation							
Data5	(data type: 16 bit unsigned int, 2's complement, byte order: little endian, scale factor: 0.1, unit: A)							
Data6	Battery discharge voltage							
Data7	(data type: 16 bit unsigned int, byte order: little endian, scale factor: 0.1, unit: V)							

CAN ID: 0x 355,Transmission Cycle is 1s.

	bit7	bit6	bit5	bit4	bit3	bit2	bit1	bit0
Data0	SOC Value							
Data1	(data type: 16 bit unsigned int, byte order: little endian, scale factor: 1, unit: %							
Data2	SOH Value							
Data3	(data type: 16 bit unsigned int, byte order: little endian, scale factor: 1, unit: %)							
Data4	Reserved							
Data5	Reserved							
Data6	Reserved							
Data7	Reserved							

CAN ID: 0x 356,Transmission Cycle is 1s.

	bit7	bit6	bit5	bit4	bit3	bit2	bit1	bit0
Data0	Battery Voltage							
Data1	(data type: 16 bit unsigned int, 2's complement, byte order: little endian, scale factor: 0.1, unit: V)							
Data2	Battery Current							
Data3	(data type: 16 bit signed int, 2's complement, byte order: little endian, scale factor: 0.1, unit: A)							
Data4	Battery Temperature							
Data5	(data type: 16 bit signed int, 2's complement, byte order: little endian, scale factor: 0.1, unit: deg C)							
Data6	Reserved							
Data7	Reserved							

CAN ID: 0x 399,Transmission Cycle is 1s.

	bit7	bit6	bit5	bit4	bit3	bit2	bit1	bit0	
Data0 Data1	Battery Specification (Unit: 0.1kWh)								
Data2							Cell Low Voltage	Cell High Voltage	Warn
Data3									
Data4							Cell Low Voltage	Cell High Voltage	Alarms
Data5	Reserved								
Data6	Reserved								
Data7	Reserved								

CAN ID:0x35C,Transmission Cycle is 1s.

	bit7	bit6	bit5	bit4	bit3	bit2	bit1	bit0
Data0	Charge enable	Discharge enable	Forced charge enable					
Data1	Reserved							
Data2	Reserved							
Data3	Reserved							
Data4	Reserved							
Data5	Reserved							
Data6	Reserved							
Data7	Reserved							

CAN ID:0x3DA Transmission Cycle is 1s.which is not necessary.

	bit7	bit6	bit5	bit4	bit3	bit2	bit1	bit0
Data0	MAX Cell Voltage							
Data1	(data type: 16 bit unsigned int, byte order: little endian, scale factor: 1, unit: mV)							
Data2	MIN Cell Voltage							
Data3	(data type: 16 bit unsigned int, byte order: little endian, scale factor: 1, unit: mV)							
Data4	MAX Cell Voltage No							
Data5	MIN Cell Voltage No							
Data6	Reserved							
Data7								

CAN ID:0x3DB Transmission Cycle is 1s.which is not necessary.

	bit7	bit6	bit5	bit4	bit3	bit2	bit1	bit0
Data0	Battery Highest Temperature (data type: 8 bit unsigned int, scale factor: 1,offset:50, unit:deg C)							
Data1	Battery Lowest Temperature (data type: 8 bit unsigned int, scale factor: 1,offset:50, unit:deg C)							
Data2	Battery Highest Temperature No (data type: 8 bit unsigned int, scale factor: 1,offset: 0)							
Data3	Battery Lowest Temperature No (data type: 8 bit unsigned int, scale factor: 1,offset: 0)							
Data4	Reserved							
Data5	Reserved							
Data6	Reserved							
Data7	Reserved							