



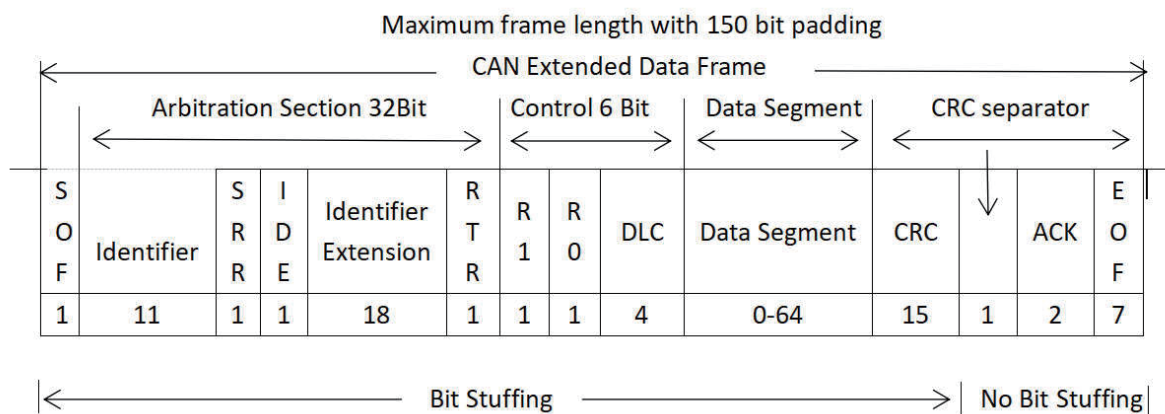
BMS CAN Communication Protocol 1.3

1. Overview

This manual defines the CAN communication protocol for the BMS system of JDA company.

2. Physical Layer Docking

The physical link layer interface of this protocol is the CAN bus, and the message format follows the CAN2.0B specification. All messages adopt the CAN extended frame format is as follows:



3. Protocol Data Unit (PDU)

The protocol data unit of this agreement refers to the J1939 protocol. The PDU consists of seven parts, namely priority, reserved bits, data pages, PDU format, specific PDU (which can be used as target address, group extension, or dedicated), source address, and data domain, as follows:

J1939 PDU														
P	R	DP				PF					SA			Data
3	1	1				8					8			0-64

Definition: P is the priority, R is the reserved bit, DP is the data page, PF is the PDU format, PS is the specific PDU, and SA is the source address °

This protocol stipulates that:

PF is the protocol message command code

PS is the destination address

SA is the source address

Communication Baud 250K

High byte before low byte after (excluding CRC verification)



4. Protocol Content

4.1 Operating Parameters 1 ID: 0x180150F1

Sending node : BMS ; Receiving node : Coordination controller ; Sending cycle : 1s ; Data length : 8 byte ;

Byte	Content	Length	Unit	Notes
0~1	Cell Max Voltage	2Byte	0.001V	
2~3	Cell Min Voltage	2Byte	0.001V	
4	SOC	1Byte	1%	0~100
5	SOH	1Byte	1%	0-100
6	NA	1Byte		
7	Relay Status	1Byte		0:close 1:open

4.2 Operating Parameters 2 ID: 0x180250F1

Sending node : BMS ; Receiving node : Coordination controller ; Sending cycle : 200ms ; Data length : 8 byte ;

Byte	Content	Length	Unit	Notes
0~1	BAT Total Voltage	2Byte	0.1V	
2~3	BAT Total Current	2Byte	0.1A	
4~5	Charge Max Current	2Byte	0.1A	
6~7	Discharge Max Current	2Byte	0.1A	

4.3 Operating Parameters 3 ID: 0x180350F1

Sending node : BMS ; Receiving node : Coordination controller ; Sending cycle : 200ms ; Data length : 8 byte ;

Byte	Content	Length	Unit	Notes
0	Max Voltage Group Num	1Byte		1~255
1	Max Voltage Pack Num	1Byte		1~255
2	Max Voltage Cell Num	1Byte		1~255



3	Max Temp Group Num	1Byte		1~255
4	Max Temp Pack Num	1Byte		1~255
5	Max Temperature	1Byte	1°C	-30~80
6	NA	1Byte		
7	NA	1Byte		

4.4 Operating Parameters 4 ID: 0x180450F1

Sending node : BMS ; Receiving node : Coordination controller ; Sending cycle : 200ms ; Data length : 8 byte ;

Byte	Content	Length	Unit	Notes
0	Min Voltage Group Num	1Byte		1~255
1	Min Voltage Pack Num	1Byte		1~255
2	Min Voltage Cell Num	1Byte		1~255
3	Min Temp Group Num	1Byte		1~255
4	Min Temp Pack Num	1Byte		1~255
5	Min Temperature	1Byte	1°C	-30~80
6	NA			
7	NA			

4.6 BAT Status Parameters ID: 0x180650F1

Sending node : BMS ; Receiving node : Coordination controller ; Sending cycle : 200ms ; Data length : 8 byte ;

Byte	Content	Length	Unit	Notes
0	Battery Status	1Byte	By Value	0:Wait;1:Nocharge and Nodischarge; 2:Nocharge; 3:Nodischarge; 4:Charging;5Discharging
1	System Status	1Byte		Look System Status



2	Level I Warning 1	1Byte		Look Level I Warning 1
3	Level I Warning 2	1Byte		Look Level I Warning 2
4	BMS Special Control Bit	1Byte	Bit0-Bit1	0:Normal 1:Request silence
			Bit2-Bit3	0:Normal 1:Require Balanced and Strong Charging of the Battery
			Bit4-Bit7	Reserved
5	NA	1Byte		
6	CRC16_L	1Byte		
7	CRC16_H	1Byte		

4.7 BAT Status Parameters ID: 0x180750F1

Sending node : BMS ; Receiving node : Coordination controller ; Sending
cycle : 200ms ; Data length : 8 byte ;

Byte	Content	Length	Unit	Notes
0	Level II Warning 1	1Byte		Look Level II Warning 1
1	Level II Warning 2	1Byte		Look Level II Warning 2
2	Level III Warning 1	1Byte		Look Level III Warning 1
3	Level III Warning 2	1Byte		Look Level III Warning 2
4	Level III Warning 3	1Byte		Look Level III Warning 3
5	NA			
6	CRC16_L	1Byte		Calculate CRC check for bytes 0-5
7	CRC16_H	1Byte		



4.8 PCS Status ID:0x1801F150

Sending node : Coordination controller ; Receiving node : BMS ; Sending cycle : 500ms ; Data length : 8 byte ;

Byte	Content	Length	Unit	Notes
0	Heartbeat	1Byte		1~255
1	PCS Status	1Byte	By value	0: Initial 1: Ready 2: Charge 3: Discharge 4: Fault 5: Permanent Fault
2~3	Battery Power	2Byte	1kW	INT16; Positive for Discharge, Negative for Charging
4	HPS Response BMS	1Byte	Bit0-Bit1	0:Normal Status 1: Silence Response Finish
			Bit2-Bit3	0:Normal Status 1: Battery Balanced Strong Charging Response Completed
			Bit4-Bit7	Reserved
5	NA	1Byte		
6	CRC16_L	1Byte		Calculate CRC check for bytes 0-5
7	CRC16_H	1Byte		



System status:

Bit0	Bit1	Bit2	Bit3	Bit4	Bit5	Bit6	Bit7
System Ready	Charge Finished	Discharge Finished	First Alarm Status	Second Fault Status	Third Protection Status	Level Four Protection Flag	Reserved

Explanation: Logic 1 indicates that the event is true; Logic 0 indicates that the event is false;

Level I Warning 1:

Bit0	Bit1	Bit2	Bit3	Bit4	Bit5	Bit6	Bit7
Temperature High	Temperature Low	Temperature Different Max	Total Voltage High	Total Voltage Low	Cell Voltage High	Cell Voltage Low	Cell Voltage Different Max

Level I Warning 2:

Bit0	Bit1	Bit2	Bit3	Bit4	Bit5	Bit6	Bit7
Charge Current Max	Discharge Current Max	SOC High	SOC Low	Branch Pressure Difference Alarm (Parallel System)	Reserved	Reserved	Reserved

Level II Warning 1:

Bit0	Bit1	Bit2	Bit3	Bit4	Bit5	Bit6	Bit7
Temperature High	Temperature Low	Temperature Different Max	Total Voltage High	Total Voltage Low	Cell Voltage High	Cell Voltage Low	Cell Voltage Different Max

Level II Warning 2:

Bit0	Bit1	Bit2	Bit3	Bit4	Bit5	Bit6	Bit7
Charge Current Max	Discharge Current Max	SOC High	SOC Low	Reserved	Reserved	Reserved	Reserved

Level III Warning 1:

Bit0	Bit1	Bit2	Bit3	Bit4	Bit5	Bit6	Bit7
Temperature High	Temperature Low	Temperature Different Max	Total Voltage High	Total Voltage Low	Cell Voltage High	Cell Voltage Low	Cell Voltage Different Max



Level III Warning 2:

Bit0	Bit1	Bit2	Bit3	Bit4	Bit5	Bit6	Bit7
Charge Current Max	Discharge Current Max	Short Circuit Current	Reserved	Cell Open Circuit	Data Acquisition Failure	Master-Slave Board Communication Failure	Reserved

Level III Warning 3:

Bit0	Bit1	Bit2	Bit3	Bit4	Bit5	Bit6	Bit7
P Relay Feed Back Fault	N Relay Feed Back Fault	Inverter BMS Voltage Low Fault	Insulation Fault	Temperature High Level IV	Reserved	Reserved	Reserved

Explanation:

- 1) Logic 1 indicates that the event is true; Logic 0 indicates that the event is false;
- 2) The larger the fault level, the more severe the fault (level 3).



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