JK-DZ08-B1A24S Equalizer communication protocol

1. Outline

This Agreement constrains JK-DZ08-B1A24S Equalizer electrical interface board for external communication, a data format

Content type, communication speed and the like.

2. Communication parameters

Communication Interface CAN	
Baud Rate	500Kbps

3. CAN Bus data format

Used only in the communication process CAN Standard bus frame, unused frame extended by CAN bus

The arbitration field ID To restrict the content of the entire communication frame.

CAN Bus arbitration field extended frame ID Altogether 11Bit . Stipulated in the agreement high 7 Bits are all 0 ,low 4 Place

Used to indicate the device address.

Arbitration field (ARBITRATION FIELD)	
BIT10: 4	BIT3: 0
0	Equalizer address Address

4. Communication flow

By way of the entire communication performed from the master, the main host device, the equalizer from the device. All through

Letter can only be initiated by the master device, slave devices respond. Define a first data word of each frame in the communication process

Section indicating the data type, all data frames are endian, the low byte.

Below the device address 0x01 For example, to communicate explained.

4.1 Equalizer data request

1) The host sends data

Addr	Data Field	
	1	2-8
0x01	0xFF	-

2) EQ response

Addr	Data Field							
	1	2	3	4	5	6	7	8
0x01	0x01	temperature (INT16) (℃)		The total voltage (UINT16) (10mV)		The average voltage (UINT16) (mV)		Recognition Quantity
0x01	0x02 highest monomer	Minimum Single body	Balanced and alarm	Maximum Differential Pressure (UINT16) (MV)		Equalizing currents (UINT16) (MA)		
0x01	0x03 Balance trigger pressure (UINT16) (mV)			The maximum equalizing current (UINT16) (mA)		balanced switch	Number of monomer the amount	-
0x01	0x04	Number monomer N	Cell voltage N (UINT16) (mV)		Cell voltage N + 1 (UINT16) (mV)		Cell voltage N + 2 (UINT16) (mV)	

Note 1. Balanced and alarm bytes BIT0 It represents a balanced battery; BIT1 It represents a balancing battery discharge; BIT4

It represents the number of monomer is not set correctly; BIT5 It represents a line resistance is too large. Note 2. Identifying a number of

monomers equalizer actually recognized number string, the number of work string monomers equalizer settings

number. Note 3. Number monomer N Cell voltage for a frame number.

4.2 String set number of monomer

1) The host sends data

Addr	Data Field		
	1	2	3-8
0x01	0xF0	The number of monomers	-

2) EQ response

Addr	Data Field		
	1	2	3-8
0x01	0xF1	The number of monomers	-

Note 1. The amount of monomer ranges 2-24 , Beyond the scope of the equalizer will not be recognized, and returns the current equalizer

Internal parameters.

4.3 Set trigger pressure equalization

1) The host sends data

Addr	Data Field			
	1	2	3	4-8
0x01	0xF2	Balance trigger pressure (UINT16) (mV)		-

2) EQ response

Addr	Data Field			
	1	2	3	4-8
0x01	0xF3	Balance trigger pressure (UINT16) (mV)		-

Note 1. Balance trigger pressure range 2-1000mV Out of range equalizer will not be recognized, and returns when

Within the parameters before the equalizer.

4.4 Set the maximum equalizing current

1) The host sends data

Addr	Data Field			
	1	2	3	4-8
0x01	0xF4	The maximum equalizing current (UINT16) (mA)		-

2) EQ response

Addr	Data Field			
	1	2	3	4-8
0x01	0xF5	The maximum equalizing current (UINT16) (mA)		-

Note 1. The maximum equalizing current range 30-1000mA Out of range equalizer will not be recognized, and returns when

Within the parameters before the equalizer.

4.5 Setting the balancing switch

1) The host sends data

Addr	Data Field		
	1	2	3-8
0x01	0xF6	Balancing switch	-

2) EQ response

Addr	Data Field		
	1	2	3-8
0x01	0xF7	Balancing switch	-

Note 1. Balancing switch set to range 0-1,0 Close balanced representation; 1 Indicate on balanced; are out of range

Instrument will not be recognized, and returns the internal parameters of the current equalizer.

5. For example

5.1 Equalizer data request

序号	帧间隔时间us	名称	帧ID	帧类型	帧格式	DLC	数据	帧数量
00000001	623.093.308	发送成功	001	DATA	STANDARD	1	FF	1
00000002	623.078.363	接收	001	DATA	STANDARD	8	01 00 15 1E D3 0F 69 14	1
00000003	000.000.262	接收	001	DATA	STANDARD	8	02 13 02 00 00 05 00 00	1
00000004	000.000.229	接收	001	DATA	STANDARD	7	03 03 E8 01 FF 00 14	1
00000005	000.009.116	接收	001	DATA	STANDARD	8	04 00 0F 69 0F 69 0F 67	1
00000006	000.000.236	接收	001	DATA	STANDARD	8	04 03 0F 69 0F 68 0F 67	1
00000007	000.000.258	接收	001	DATA	STANDARD	8	04 06 0F 68 0F 68 0F 6C	1
00000008	000.009.609	接收	001	DATA	STANDARD	8	04 09 0F 6A 0F 67 0F 68	1
00000009	000.000.235	接收	001	DATA	STANDARD	8	04 0C 0F 6B 0F 69 0F 69	1
00000010	000.000.234	接收	001	DATA	STANDARD	8	04 0F 0F 69 0F 6A 0F 6B	1
00000011	000.009.632	接收	001	DATA	STANDARD	8	04 12 0F 6A 0F 6D 00 00	1
00000012	000.000.260	接收	001	DATA	STANDARD	8	04 15 00 00 00 00 00 00	1

Host sends: frame ID 01 ;data 0xFF ;

EQ response ID : 01 ;

Response data: 01 00 15 1E D3 0F 69 14 ;//temperature 0x0015 * 1 ℃ = twenty one ℃

// The total voltage 0x1ED3 * 10mV = 7891 * 10mV = 78.910V

// The average voltage 0x0F69 * 1mV = 3995mV = 3.995V

// Identification number of monomers 0x14 * 1 String = 20 string

Response data: 0,213,020,000,050,000 ; // maximum voltage cells 0x13 = The first 19 string

// Low-voltage cells 0x02 = The first 2 string

// Balanced and alarm (0x00 & BIT0) = 0 No equalization charge

// Balanced and alarm (0x00 & BIT1) = 0 No balancing discharge

// Balanced and alarm (0x00 & BIT4) = 0 Set the correct number of monomers

// Balanced and alarm (0x00 & BIT5) = 0 Normal line resistance

// Maximum Differential Pressure 0x0005 * 1mV = 5mV = 0.005V

// Equalizing currents 0x0000 * 1mA = 0mA = 0A

Response data: 03 03 E8 01 FF 00 14 ; // trigger pressure equalization 0x03E8 * 1mV = 1000mV = 1V

// The maximum equalizing current 0x01FF * 1mA = 511mA = 0.511A

// Balancing switch 0x00 Close balanced

// Set the number of monomer 0x14 * 1 String = 20 string

Response data: 04 00 0F 69 0F 69 0F 67 ; // start voltage Number 0x00 = 0

// monomer 0 Voltage 0x0F69 * 1mV = 3945mV = 3.945V

// monomer 1 Voltage 0x0F69 * 1mV = 3945mV = 3.945V

// monomer 2 Voltage 0x0F67 * 1mV = 3943mV = 3.943V

Response data: 04 03 0F 69 0F 68 0F 67 ; // start voltage Number 0x03 = 3

// monomer 3 Voltage 0x0F69 * 1mV = 3945mV = 3.945V

// monomer 4 Voltage 0x0F68 * 1mV = 3944mV = 3.944V

// monomer 5 Voltage 0x0F67 * 1mV = 3943mV = 3.943V

Response data: 04 06 0F 68 0F 68 0F 6C ; // start voltage Number 0x06 = 6

// monomer 6 Voltage 0x0F68 * 1mV = 3944mV = 3.944V

// monomer 7 Voltage 0x0F68 * 1mV = 3944mV = 3.944V

// monomer 8 Voltage 0x0F6C * 1mV = 3948mV = 3.948V

5.2 Set the number of monomers

序号	帧间隔时间us	名称	帧ID	帧类型	帧格式	DLC	数据	帧数量
00000001	2231.219.316	发送成功	001	DATA	STANDARD	2	F0 10	1
00000002	2231.207.202	接收	001	DATA	STANDARD	2	F1 10	1
00000003	306.305.099	发送成功	001	DATA	STANDARD	2	F0 20	1
00000004	000.000.000	接收	001	DATA	STANDARD	2	F1 10	1

Host sends: frame ID 01 ;

data 0xF0 0x10 ; // set number of monomers 16 string

EQ response ID : 01 ;

Response data: F1 10 ; // number of monomers 0x10 = 16 String, the transmission data is consistent with the received data, the setting is successful

Host sends: frame ID 01 ;

data 0xF0 0x20 ; // set number of monomers 32 string (Out of range)

EQ response ID : 01 ;

Response data: F1 10 ; // number of monomers 0x10 = 16 string, Transmission data and reception data inconsistency, setting failed

5.3 Set trigger pressure equalization

序号	帧间隔时间us	名称	帧ID	帧类型	帧格式	DLC	数据	帧数量
00000001	004.576.999	发送成功	001	DATA	STANDARD	3	F2 00 FF	1
00000002	000.000.000	接收	001	DATA	STANDARD	3	F3 00 FF	1
00000003	019.923.794	发送成功	001	DATA	STANDARD	3	F2 FF FF	1
00000004	000.000.000	接收	001	DATA	STANDARD	3	F3 00 FF	1

Host sends: frame ID 01 ;

data F2 00 FF ; // set the trigger pressure equalization 0x00FF * 1mV = 255mV

EQ response ID : 01 ;

Response data: F3 00 FF ; // trigger pressure equalization 0x00FF * 1mV = 255mV ; Transmission data coincides with the received data,
Setting Success

Host sends: frame ID 01 ;

data F2 FF FF ; // set the trigger pressure equalization 0xFFFF * 1mV = 65535mV (Out of range)

EQ response ID : 01 ;

Response data: F2 00 FF ; // trigger pressure equalization 0x00FF * 1mV = 255mV ; Data transmission and reception of different data

Induced, setting failed

5.4 Set the maximum equalizing current

序号	帧间隔时间us	名称	帧ID	帧类型	帧格式	DLC	数据	帧数量
00000001	011.586.612	发送成功	001	DATA	STANDARD	3	F4 01 FF	1
00000002	011.594.656	接收	001	DATA	STANDARD	3	F5 01 FF	1
00000003	004.790.044	发送成功	001	DATA	STANDARD	3	F4 01 00	1
00000004	004.771.754	接收	001	DATA	STANDARD	3	F5 01 FF	1

Host sends: frame ID 01 ;

data F4 01 FF ; // set the maximum equalizing current trigger 0x01FF * 1mA = 511mA = 0.511A

EQ response ID : 01 ;

Response data: F5 01 FF ; // set the maximum equalizing current trigger 0x01FF * 1mA = 511mA = 0.511A ;send data

And receive data consistency, setting success

Host sends: frame ID 01 ;

data F4 01 00 ; // set the trigger pressure equalization 0x0100 * 1mV = 256mA (Out of range)

EQ response ID : 01 ;

Response data: F5 01 FF ; // set the maximum equalizing current trigger 0x01FF * 1mA = 511mA = 0.511A ; send data

Inconsistent with the received data set failed

5.5 Setting the balancing switch

序号	帧间隔时间us	名称	帧ID	帧类型	帧格式	DLC	数据	帧数量
00000001	005.752.495	发送成功	001	DATA	STANDARD	2	F6 00	1
00000002	005.743.479	接收	001	DATA	STANDARD	2	F7 00	1
00000003	016.869.377	发送成功	001	DATA	STANDARD	2	F6 01	1
00000004	016.870.476	接收	001	DATA	STANDARD	2	F7 01	1
00000005	002.407.549	发送成功	001	DATA	STANDARD	2	F6 02	1
00000006	002.395.940	接收	001	DATA	STANDARD	2	F7 01	1

Host sends: frame ID 01 ;

data F6 00 ; // 0x00 Close balanced

EQ response ID : 01 ;

Response data: F7 00 ; // 0x00 Equilibrium is closed, the transmission data and reception data is consistent, the setting is successful

Host sends: frame ID 01 ;

data F6 01 ; // 0x00 Open equalization

EQ response ID : 01 ;

Response data: F7 01 ; // 0x01 Balanced open, consistent data to send and receive data, setting success

Host sends: frame ID 01 ;

data F4 02 ; // Data out of range

EQ response ID : 01 ;

Response data: F7 01 ; // balanced open; Transmission data and reception data inconsistency, setting failed