Body builder CAN Gateway

Body builder CAN gateway function, according to SAE J1939

Function

This document describes the messages provided by the Volvo Body Builder module, BBM.

The messages are defined according to the SAE J1939 standard, January 2009 revision.

- Baud rate for BBM gateway is 250 kbps and Source Address 230 is used for most broadcasted messages.
- EBS22/RGE22, which are gatewayed from respective trailer and have their own source addresses.
- Bytes are described in format 0–7.
- Supported signals within messages can vary depending on vehicle configuration.
- For some signals, there are references to corresponding SAE J1939 SPN.

For all request messages, it is of utmost importance that the identifiers (to all messages sent by the bodywork) are correctly sent and are in accordance with the descriptions. Also, the priority must be sent as described to ensure that the requests are accepted by the truck.

Byte \ Bit	7	6	5	4	3	2	1	0
0	7	6	5	4	3	2	1	0
1	15	14	13	12	11	10	9	8
2	23	22	21	20	19	18	17	16
3	31	30	29	28	27	26	25	24
4	39	38	37	36	35	34	33	32
5	47	46	45	44	43	42	41	40
6	55	54	53	52	51	50	49	48
7	63	62	61	60	59	58	57	56

T9072267

BBU_BBNet_01P

Transmission repetition rate	Data length	Default priority	Parameter group number (PGN) Dec / Hex	Source address Dec / Hex	Identifier
20 ms	8 bytes	4	65407 / FF7F	127 / 7F	0x10FF7F7F

Start bit	Length	SPN	Description	
2	2	—	**Remote immobilisation request**	
			0 / 00	Off
			1 / 01	On
			2 / 10	Error
			3 / 11	Not available or not installed
4	2	—	**Remote engine start switch** Transition from 0 -> 1 is required to start	
			0 / 00	Off
			1 / 01	On
			2 / 10	Error
			3 / 11	Not available or not installed
6	2	—	**Remote parking brake control** Transition from 0 -> 1 is required to release parking brake	
			0 / 00	Parking brake release not requested
			1 / 01	Parking brake release requested
			2 / 10	Error
			3 / 11	Not available or not installed
8	2	—	**Alternative load distribution request**	
			0 / 00	Off
			1 / 01	On
			2 / 10	Error
			3 / 11	Not available or not installed
10	2	—	**PTO2 activation request** Transition from 0 -> 1 is required to activate PTO2 when P1CWM = 0 or 1.	
			0 / 00	No change request. (Off, when P1CWM = 2)
			1 / 01	Request to change status of PTO2 (On, when P1CWM = 2)
			2 / 10	Error
			3 / 11	Not available or not installed
12	2	—	**Remote engine shut down request**	
			0 / 00	No request.
			1 / 01	Request to shut engine down
			2 / 10	Error
			3 / 11	Not available or not installed
16	2	—	**Remote inhibit reverse gear request**	
			0 / 00	Off, inhibit reverse gear not requested

Request Engine start

BBU_BBNet_01P will be used for this request

Identifier (29 bit): **10FF7F7F** ➜ 10000.1111.1111.0111.1111.0111.1111
1 **2** **3** **4**

1 Priority (P), 4 (Hex. 10) = 1000
2 PDU format (PF). Dec. 255 (Hex. FF)
3 PDU specific (PS). Dec. 127 (Hex. 7F)
4 Source address (SA). Dec. 127 (Hex. 7F)

To perform engine start by CAN request, it is required that the truck receives a transition from 0 to 1
Repetition rate for BBU_BBNet_01P is 20 ms.

Request engine start:
First Off (00) must be requested:**CF FF FF FF FF FF FF FF**

Byte 0	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7	Byte
CF	FF	FF	FF	FF	FF	FF	FF	Hex
207	255	255	255	255	255	255	255	Dec
1100.1111	1111.1111	1111.1111	1111.1111	1111.1111	1111.1111	1111.1111	1111.1111	Bin

Complete message to request engine start, off:
10 FF 7F 7F CF FF FF FF FF FF FF FF

Then a transmission from 0 to 1 must be sent, Engine start On (01):
DF FF FF FF FF FF FF FF

Byte 0	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7	Byte
DF	FF	FF	FF	FF	FF	FF	FF	Hex
223	255	255	255	255	255	255	255	Dec
1101.1111	1111.1111	1111.1111	1111.1111	1111.1111	1111.1111	1111.1111	1111.1111	Bin

Complete message to request engine start, on:
10 FF 7F 7F DF FF FF FF FF FF FF FF

Engine shutoff

Complete message to shut off the engine:
10 FF 7F 7F FF DF FF FF FF FF FF FF