Technischer Hinweis: **05653306.1654**

Bezeichnung: **CAN Protokoll Liste C81**

Motortype: **3/4H50 T-TICD**

Erstellt von:	CR	Datum:	08.01.26
Geprüft:	MO	Datum:	08.01.26

Änderungsstand:

Anzahl	Änd.-Nr.	Datum	Name	Änderung
	00	08.01.26	CR	

CAN-notes

00	engine control EDC17
03	control panel/gearbox
21	Request Soft/CI
6E	service tool/control panel
0B	Torque limitation
Baud Rate:	250 kbit/s

PGN decimal	Name	Identifier hex	SPN	Databyte lsb-msb	Information	Value/bit	Offset		Cycle (ms)	Source	Remote	N	Engine Type
C81 sent messages													
61444	EEC-1	0CF00400	513	3	actual % (inner)torque	1%	-125%		10	00	broadcast	X	all
			190	4-5	engine speed	0,125 rpm	0						
			1675	Byte7/bit1-4	Engine starter mode	0x0= Start not requested							
						0x1= Cranking active							
						0x3= Cranking finished							
						0x4= Cranking inhibit, engine running							
						0xC= Cranking inh., unknown reason							
61443	EEC-2	0CF00300	92	3	%load at current speed	1%	0%		50		broadcast		all

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PGN decimal	Name	Identifier hex	SPN	Databyte lsb-msb	Information	Value/bit	Offset		Cycle (ms)	Source	Remote	N	Engine Type
C81 sent messages													
65247	EEC3	18FEDF00	514	1	nominal friction %torque	1%	-125%		250	00	broadcast		all
			3236	6-7	AT1 Exhaust gas mass flow	0,2 kg/h	0						
65253	HOURS	18FEE500	247	1-4	engine total operation hours	0,05 h	0		once	00	on request		all
65262	ET-1	18FEEE00	110	1	engine coolant temperature	1 °C	-40°C		1000	00	broadcast		all
			174	2	fuel temperature	1 °C	-40°C						
			175	3-4	oil temperature	0,03125°C	-273°C						
65263	EFL/P1	18FEEF00	94	1	fuel delivery pressure	0,04 bar	0		500	00	broadcast		all
			100	4	engine oil pressure	0,04 bar	0						
65243	EFLP2	18FEDB00	157	3-4	Engine Fuel 1 Injector Metering Rail 1 Pressure	0,0390625 bar	0		500	00	broadcast		all
65265	CCVS	18FEF100	84	2-3	Wheel based vehicle speed	1/256 km/h	0		100	00	broadcast		Custo-mized
65266	LFE	18FEF200	183	1-2	fuel rate	0,05 Ltr./h	0		100	00	broadcast		all
65269	AMB	18FEF500	108	1	barometric pressure	5 mbar	0		1000	00	broadcast		all
65270	IC-1	18FEF600	105	3	intake temperature	1 °C	-40°C		500	00	broadcast		all
			106	4	inlet pressure	0,02 bar	0						
			107	5	air filter diff. Pressure	0,5 mbar	0						
			173	6-7	exhaust gas temp. (DPF)	0,03125°C	-273°C						

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64891	AT1S	18FD7B00	3719	1	DPF soot load percent	1%	0		once	00	on request		TICD
64946	AT1IMG	18FDB200	3251	5-6	DPF differential pressure	1mbar	0		500	00	broadcast		TICD
64800	A1DOC	18FD2000	4765	1-2	DOC intake gas temperature	0,03125°C	-273°C		500	00	broadcast		TICD
64948	AT1IG2	18FDB400	3242	3-4	DPF intake gas temperature	0,03125°C	-273°C		500	00	broadcast		TICD
65280	proprietary	18FF0000		1-2	phys. Injection quantity	0,02 mg/stroke	0		20	00	broadcast	X	all
				3-4	phys. Torque	0,1 Nm	0						
65271	VEP1	18FEF700	168	5-6	electrical potential	0,05V	0		1000	00	broadcast		all
			158	7-8	battery potential **True value only by 12V system**	0,05V	0						all
65279	WFI	18FEFF00	97	Byte1/bit1	water in fuel	0 -water in fuel 1-no water in fuel			10000	00	Broadcast	X	all
PGN decimal	**Name**	**Identifier** hex	**SPN**	**Databyte** lsb-msb	**Information**	**Value/bit**	**Offset**		**Cycle (ms)**	**Source**	**Remote**	**N**	**Engine Type**
C81 sent messages													
64892	DPF C1	18FD7C00	3700	Byte2/bit3-4	active Reg. Status	0b00=no active regen.			1000	00	broadcast		TICD
						0b01=active regen.							
			3701	Byte2/bit5-6	DPF Status	0b00=Level 0 no Reg. needed							
						0b01=Level 1 Regeneration status							
						0b10=Level 2 Regeneration status							
			3703	Byte3/bit3-4	regeneration inhibit	0b00=inhibit inactive (normal operat.)							
					due to inhibit switch	0b01=inhibit active							
			3708	Byte4/bit5-6	regeneration inhibit	0b00=inhibit inactive (normal operat.)							

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					due to neutral gear switch	0b01=inhibit active							
			3710	Byte5/bit1-2	regeneration inhibit	0b00=inhibit inactive (normal operat.)							
					due to parking brake	0b01 = inhibit active							
			3698	Byte7/bit 4	Exhaust Gas high Temp.	0 = normal operation 1 = high temp. warning during Reg.							
64554	OII	18FC2A00	7426	2-3	Time to torque derate level 1	1 min	0		10	00	Broadcast	X	TICD
			7428	5-6	Time to torque derate level 2								
65242	SOFT/CI	18EBFF00		2-8	Software Identification/ Components Identification	ASCII ASCII	0 0				Request Request		all all
60928	NAME	18EEFF00			Manufacturer and System IDs	See below					Request		
C81 Error messages									**Cycle (ms)**				
65226	DM1 single	18FECA00		1	0x00 = lamps off	See below			1000	0	Broadcast		all
					0x04 = amber warning lamp on								
					0x10 = red stop lamp on								
				3-4	SPN								
				5	SPN / FMI								
				6	Occurance counter								
65227	DM2 single	18FECB00		See below	similar to DM1				once		on request		All

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Motortype: **3/4H50 T-TICD**

PGN decimal	**Name**	**Identifier** hex	**SPN**	**Databyte** lsb-msb	**Information**	**Value/bit**	**Offset**		**Cycle** (ms)	**Source**	**Remote**	**N**	**Engine Type**
C81 Error messages													
60671	DM1 BAM	18ECFF00		See below	Multi Message Announce				1000	0	broadcast	X	all
60415	DM1 Multi	18EBFF00		See below	Packages 2-6				50	0	broadcast	X	all
60671	DM2 BAM	18ECFF00		See below	similar to DM1						request		all
60415	DM2 Multi	18EBFF00		See below	similar to DM1						request		all
C81 sent messages													
65364	proprietary	18FF5400		1-2	Remaining service hours	1 h	0 hrs		100	00	broadcast	X	all
	ProStOut			Byte7/bit3	engine running	0- lamp off 1- lamp on							
	I/O Status			Byte7/bit5	Service delay	0- lamp off 1- lamp on							
				Byte7/bit7	pre-glow active	0- lamp off 1- lamp on							
				Byte8/bit1	oil pressure missing	0- lamp off 1- lamp on							
				Byte8/bit3	engine diagnostic lamp	0- lamp off 1- lamp on							
				Byte8/bit5	engine overtemperature	0- lamp off 1- lamp on							
				Byte8/bit7	air filter switch	0- lamp off 1- lamp on							
65237	AI	18FED500	3353	Byte3/bit1	Alternator Status	0- lamp off 1- lamp on			1000	00	broadcast		all

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Motortype: **3/4H50 T-TICD**

C81 accepted CAN messages													
65485	proprietary	18FFCD6E		1	Service interval reset	0x00			once	6E	00	X	all
				2		0x04							
				3		0x95							
				4		0x11							
				5		0x12							
				6		0x32							
				7		0x07							
				8		0x36							
PGN decimal	**Name**	**Identifier** hex	**SPN**	**Databyte** lsb-msb	**Information**	**Value/bit**	**Offset**		**Cycle** (ms)	**Source**	**Remote**	**N**	**Engine Type**
C81 accepted CAN messages													
57344	CM1	0CE00003	3695	Byte6/bit1-2	regeneration inhibit switch	0b00 = Reg. allowed			100	03	00	X	TICD
						0b01 = Reg. inhibit							
			3696	Byte6/bit3-4	regeneration force switch	0b00 = normal operation							
						0b01 = force regeneration (if allowed)							
			1656	Byte6/bit7-8	Auto Start enable switch	0b00 =stop 0b01 =start			100	03	00	X	
0000	TSC1 TE	0C000003	695	Byte1/bit1	override control mode	0 = disabled 1= speed control			10	03	00		all
			898	2-3	Speed setpoint	0,125 rpm	0						
			4206	8.1	Message Counter	send 0xFF			10				
			4207	8.5	Checksum	not available							
0000	TSC1 AE	0C00000B	518	4	Engine requested torque/Torque limit	1%	-125		10	0B	00		all

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Motortype: **3/4H50 T-TICD**

PGN decimal	Name	Identifier hex	SPN	Databyte lsb-msb	Information	Value/bit	Offset		Cycle (ms)	Source	Remote	N	Engine Type
C81 accepted CAN messages													
59904	PGNREQ	18EA0003		1	engine hours request	0xE5			request	03	00		all
				2		0xFE							
				3		0x00							
59904	PGNREQ	18EA0003		1	Soot load request	0x7B			request	03	00		TICD
				2		0xFD							
				3		0x00							
59904	PGNREQ	18EA0003		1	DM2 request	0xCB			request	03	00		all
				2		0xFE							
				3		0x00							
59904	PGNREQ	18EA0021		1	Soft request	0xDA			request		00		all
				2		0xFE							
				3		0x00							
				4-8		0x00							
59904	PGNREQ	18EA0021		1	CI request	0xEB			request		00		all
				2		0xFE							
				3		0x00							
				4-8		0x00							
59904	PGNREQ	18EA0021		1	NAME request	0x00			request		00		all
				2		0xEE							
				3		0x00							
				4-8		0x00							
65219	ETC5	1CFEC303	604	Byte2/bit3-4	Transmission neutral switch	0b00 = not engaged 0b01 = engaged			100	03	broadcast	X	all

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Motortype: **3/4H50 T-TICD**

65265	CCVS	18FEF121	70	Byte1/bit3-4	Parking brake switch	0b00 = not engaged 0b01 = engaged		100	21	broadcast		all
			597	Byte4/bit5-6	Brake switch (footbrake)	0b00 = not engaged 0b01 = engaged						all

All Request´s must be fully answered before the next request can be started.

The Multi-Package Message will start with a Broadcast Announce Message (BAM)

	Identifier	DLC	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7	Byte 8
CI	18ECFF00	8	20	NOB	00	NoP	FF	EB	FE	00
SOFT	18ECFF00	8	20	NOB	00	NoP	FF	E3	FE	00

I		I		L	-	-	PGN= FEEB (FEE3)=> BAM is for CI(SOFT)Messages
I		L	-	-	-	-	Number of (following) Packages
L	-	-	-	-	-	-	Number of Databytes in the Multipackage

<u>18EBFF00 – SOFT</u> – Software version
Byte 1 (Package number)
Byte 2-8 Software version in hex – convert these bytes to ASCII. – (00D165C81##V800R01###)

<u>18EBFF00 – CI</u> - Components Identification
Byte 1 (Package number)
Byte 2-8 Components Identification in hex – convert these bytes to ASCII. – (000000001651019000162)

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Motortype: **3/4H50 T-TICD**

Overview control lamp states (00 = lamp off / 01 = lamp on)

ProStOut Message (send)

Identifier 18FF5400

Byte 7								Byte 8							
8	7	6	5	4	3	2	1	8	7	6	5	4	3	2	1
Glow														Oilpr.	
Service												Diagnostic			
Engine running										Overtemperature					
								Air filter maintenance							

AI Message (send)

Identifier 18FED500

Byte 3															
8	7	6	5	4	3	2	1	8	7	6	5	4	3	2	1
Charge control															

Charge control (00 = not charging / 01 = charging)

Cab Message CM1 (receive)

Identifier 0CE00003

Byte 6															
8	7	6	5	4	3	2	1	8	7	6	5	4	3	2	1
0		1	1	0		0									
Start															
Not used															
Reg. Force switch															
Reg. Inhibit switch															

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DM1 single Message (detailed overview) - bytes 2, 7,8 not used																																
byte	1								3								4								5								6							
bit	8	7	6	5	4	3	2	1	8	7	6	5	4	3	2	1	8	7	6	5	4	3	2	1	8	7	6	5	4	3	2	1	8	7	6	5	4	3	2	1
Information	MIL		Stop		Warn.		Prot.		SPN lsb								SPN								SPN msb								FMI								CM	OC							

MIL = Malfunction indicator lamp (00 = off / 01 = on)
Stop = Stop lamp (00 = off / 01 = on)
Warn. = Warning lamp (00 = off / 01 = on)
Prot. = Protection lamp (00 = off / 01 = on)
SPN = Error suspect parameter number SPN msb > SPN > SPN lsb
FMI = Error failure mode indication
CM = conversion method (0 = standard method mode 4)
OC = occurence counter

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DM 1 Multi Package Message

If there is more than one active fault, the DTC (diagnostic trouble code) is shown as a multi-package message this is done in the following way:

The DM1 message is defined in PGN 65226 (FECA hex)

DM2 dito FECB hex auf Request
PGN EA00 DLC 3 : CB FE 00
H50: 18EA0003

The Multi-Package Message will start with a Broadcast Announce Message (BAM)

	Identifier	DLC	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7	Byte 8	
H50	18ECFF00	8	20	NOB		NoP	FF	CA	FE	0	
				I		I		L	-	-	PGN= FECA (FECB)=> BAM is for DM1(DM2)Messages
				I		L	-	-	-	-	Number of (following) Packages
				L	-	-	-	-	-	-	Number of Databytes in the Multipackage

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the associated packages (2 to 6) contain the DTCs

	Identifier	DLC	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7	Byte 8
H50	18EBFF00									
	package 1:	8	1	Lamps		SPNlo	SPNhi	SPNhi/FMI	OC	SPNlo
	package 2:	8	2	SPNhi	SPNhi/FMI	OC	SPNlo	SPNhi	SPNhi/FMI	OC
	package 3:	8	3	SPNlo	SPNhi	SPNhi/FMI	OC	SPNlo	SPNhi	SPNhi/FMI
	package 4:	8	4	OC	SPNlo	SPNhi	SPNhi/FMI	OC	SPNlo	SPNhi
	package 5:	8	5	SPNhi/FMI	OC	SPNlo	SPNhi	SPNhi/FMI	OC	Spnlo
	package 6:	8	6	SPNhi	SPNhi/FMI	OC	SPNlo	SPNhi	SPNhi/FMI	OC

SPNlo= lsb der SPN
SPNhi = msb der SPN
FMI
OC = occurance counter
Lamps 0 1 0 1 0 1 0 1
Malfunct. / Stop / Warn / Protection

TSC1 AE

Identifier: 0x0C00000B					DLC: 8			
data byte	1	2	3	4	5	6	7	8
	0x03	0xFF	0xFF	Limit	0x00	0x00	0xFF	0xFF

Limit = 100 x $Limit_{Nm}$ / M_{max} + SPN 514 = Result +125(Offset) =Endresult ->hex -> Limit

SPN 514(friction torque) = value – 125 (offset correctio

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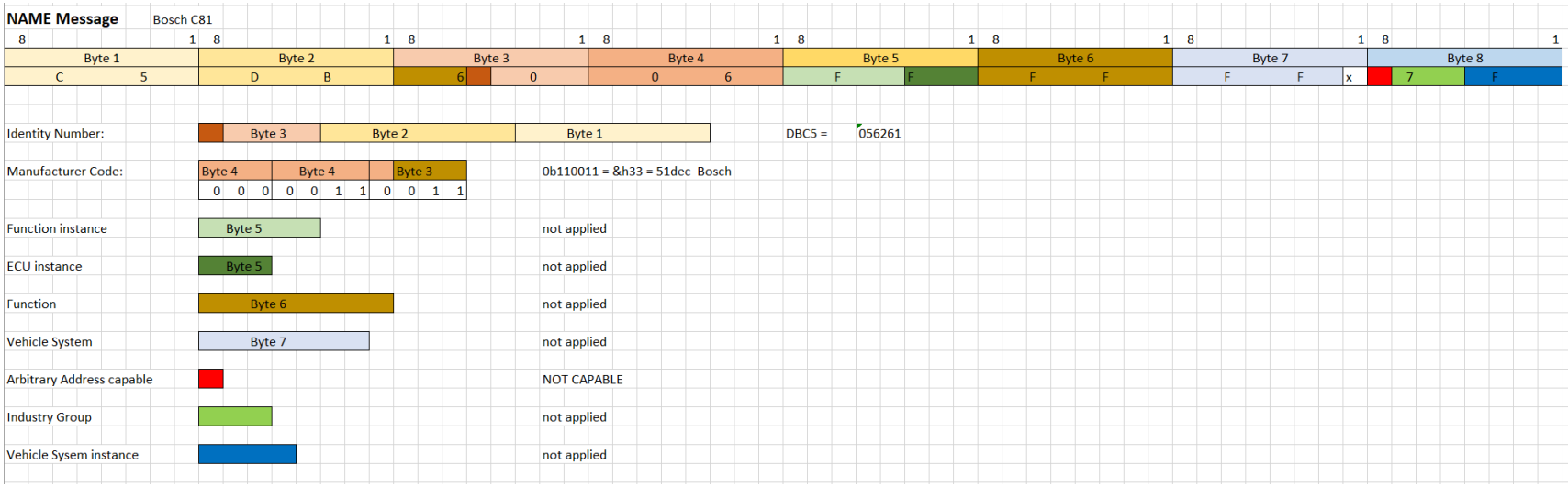
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Motortype: **3/4H50 T-TICD**

NAME

NAME message (network management / address claim)
Identifier 0x18EEFF00
Identity number = 056261 (dec)
Manufacturer code = 51 (dec) Bosch / ECU manufacturer
ECU is not capable of arbitrating it's CAN-address
See SAE-J1939-81 for detailed description



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