1.1 Aufbau CAN Botschaften

1.1.1 Übersicht J1939 Botschaften Ecolife TCU

Name	***ID***	***DLC [Byte]***	***Sendeart***	***Zyklus-zeit***	***Sender***	***Kommentar***	***PGN***
AMB	0x18FEF500	8	cyclic	1000	Engine1		0xFEF5
AUXIO1	0x18FED911	8	cyclic	100	CruiseControl	Notes:	0xFED9
AUXIO1fromTCU	0x18FED903	8	cyclic	100	Transmission 1	Notes:	0xFED9
CCVSfromCC	0x18FEF111	8	cyclic	100	CruiseControl	Verknüpfte Funktion: Kreuzschienenverteiler	0xFEF1
CCVSfromXX	0x18FEF127	8	cyclic	100	Management Computer	Verknüpfte Funktion: Kreuzschienenverteiler	0xFEF1
CM1	0x18E00010	8	noMsgSendType	0	RetarderDriveline		0xE000
CVW	0x18FD680B	8	noMsgSendType	0	BrakesSystemController		0xFD68
DM1	0x18FECA03	22	noMsgSendType	0	Transmission 1	Byte 1: ...	0xFECA
DM11	0x18FED303	22	noMsgSendType	0	Transmission 1	Previously active diagnostic trouble codes	0xFED3
DM1_DrvRET	0x18FECA10	22	noMsgSendType	0	-- Kein Sender --	Nur für Ausgabe der Temperatur zur Fehleranzeige auf Kundendisplay....	0xFECA
DM1_TrqConv	0x18FECA43	22	noMsgSendType	0	-- Kein Sender --	Nur für Ausgabe der Temperatur zur Fehleranzeige auf Kundendisplay....	0xFECA

Name	*ID*	*DLC [Byte]*	*Sendeart*	*Zyklus -zeit*	*Sender*	*Kommentar*	*PGN*
DM2	0x18FECB03	22	noMsgSendType	0	Transmission 1	Previously active diagnostic trouble codes	0xFECB
DM3	0x18FECC03	22	noMsgSendType	0	Transmission 1	Previously active diagnostic trouble codes	0xFECC
DM4	0x18FECD03	22	noMsgSendType	0	Transmission 1	Previously active diagnostic trouble codes	0xFECD
EBC1fromABS	0x18F0010B	8	cyclic	100	BrakesSystemController	Used for brake control information	0xF001
EBC1fromXX	0x18F0011E	8	cyclic	100	ElectricalSystem	Used for brake control information	0xF001
EBC3fromABS	0x18FEAD0B	8	cyclic	100	BrakesSystemController		0xFEAD
EBC5fromABS	0x18FDC40B	8	cyclic	100	BrakesSystemController	Used for information on brake control.	0xFDC4
EC1	0x18FEE300	39	cyclic	5000	Engine1	This map describes the stationary behavior of the engine and the speed dependent available indicated torque. This map	0xFEE3
ECUID	0x18FDC503	8	noMsgSendType	0	-- Kein Sender --		0xFDC5
EEC1	0xCF00400	8	noMsgSendType	0	Engine1	Engine related parameters	0xF004

Name	*ID*	*DLC [Byte]*	*Sendeart*	*Zyklus -zeit*	*Sender*	*Kommentar*	*PGN*
EEC2	0xCF00300	8	cyclic	50	Engine1	Identifies electronic engine control related parameters.	0xF003
EEC3	0x18FEDF00	8	cyclic	250	Engine1		0xFEDF
ERC1fromENGRET	0x18F0000F	8	cyclic	100	RetarderEngine	NOTE- This message will be transmitted by several types of retarding devices such as engine compression release	0xF000
ERC1fromTCU	0x18F00010	8	cyclic	100	RetarderDriveline	NOTE- This message will be transmitted by several types of retarding devices such as engine compression release	0xF000
ET1	0x18FEEE00	8	cyclic	1000	Engine1	Engine Temperature 1	0xFEEE
ETC1fromTCU	0xCF00203	8	cyclic	10	Transmission 1		0xF002
ETC2fromTCU	0x18F00503	8	cyclic	100	Transmission 1		0xF005
ETC7fromTCU	0x18FE4A03	8	cyclic	100	Transmission 1	Electronic Transmission Controller 7	0xFE4A
ETC8fromTCU	0xCFFC803	8	cyclic	20	Transmission 1	Electronic Transmission Controller #8	0xFFC8
LFE	0x18FEF200	8	cyclic	100	Engine1		0xFEF2

Name	*ID*	*DLC [Byte]*	*Sendeart*	*Zyklus-zeit*	*Sender*	*Kommentar*	*PGN*
RC_Drv	0x18FEE110	19	cyclic	5000	RetarderDriveline	This map describes the stationary behavior of the retarder.	0xFEE1
RC_Eng	0x18FEE10F	19	cyclic	5000	RetarderEngine	This map describes the stationary behavior of the retarder.	0xFEE1
RF	0x18FEFB10	8	noMsgSendType	0	RetarderDriveline		0xFEFB
RQST	0x18EAFF03	3	noMsgSendType	0	Transmission 1		0xEA00
RQST_RC_Eng	0x18EA0F03	3	noMsgSendType	0	Transmission 1		0xEA00
SOFT	0x18FEDA03	8	noMsgSendType	0	Transmission 1		0xFEDA
TC1_EL	0xC010305	8	cyclicIfActive	50	ShiftConsole Primary		0x100
TC1fromABS	0xC01030B	8	cyclicIfActive	50	BrakesSystemController		0x100
TC1fromXX	0xC010327	8	cyclicIfActive	50	Management Computer		0x100
TCFG	0x18FEE203	8	noMsgSendType	0	Transmission 1		0xFEE2
TCI	0x18FD83FE	8	cyclic	1000	-- Kein Sender --		0xFD83
TD	0x18FEE6EE	8	noMsgSendType	0	Tachograf		0xFEE6
TPCM	0x18ECFEFE	8	noMsgSendType	0	-- Kein Sender --		0xEC00
TPDT	0x1EBFEFE	8	noMsgSendType	0	-- Kein Sender --		0x1EB00
TRF1	0x18FEF803	8	cyclic	1000	Transmission 1		0xFEF8
TRF2	0x18FD9503	8	cyclic	1000	Transmission 1		0xFD95

Name	*ID*	*DLC [Byte]*	*Sendeart*	*Zyklus-zeit*	*Sender*	*Kommentar*	*PGN*
TSC1fromABS2DrvRET	0xC00100B	8	cyclic	10	BrakesSystemController	NOTE - Retarder may be disabled by commanding a torque limit of 0%. Use of the limit mode allows the use of the	0x0
TSC1fromCC2DrvRET	0xC001011	8	cyclic	10	CruiseControl	NOTE - Retarder may be disabled by commanding a torque limit of 0%. Use of the limit mode allows the use of the	0x0
TSC1fromTCU2Eng	0xC000003	8	cyclic	10	Transmission 1	NOTE - Retarder may be disabled by commanding a torque limit of 0%. Use of the limit mode allows the use of the	0x0
TSC1fromTCU2EngRET	0xC000F03	8	cyclic	10	Transmission 1	NOTE - Retarder may be disabled by commanding a torque limit of 0%. Use of the limit mode allows the use of the	0x0

Name	*ID*	*DLC [Byte]*	*Sendeart*	*Zyklus -zeit*	*Sender*	*Kommentar*	*PGN*
TSC1fromXY2DrvRET	0xC00101D	8	cyclic	10	VehicleSecurity	NOTE - Retarder may be disabled by commanding a torque limit of 0%. Use of the limit mode allows the use of the	0x0
VDC1	0x18FE4F0B	8	noMsgSendType	0	BrakesSystemController	Contains information which relates to the VDC system status.	0xFE4F
VDHR	0x18FEC1EE	8	cyclic	1000	Tachograf	High Resolution Vehicle Distance	0xFEC1
VW	0x18FEEA0B	8	noMsgSendType	0	BrakesSystemController	Vehicle Weight	0xFEEA

1.1.1.1 AMB: Ambient Conditions

Name	ID	DLC [Byte]	Sendeart	Zykluszeit	Sender	PGN
AMB	0x18FEF500	8	cyclic	1000	Engine1	0xFEF5

Name	Startbit	Länge [Bit]	Iniwert	Faktor	Offset	Min	Max	Einheit	Kommentar	SPN
AmbientAirTemp	24	16	-273	0.03125	-273	-273	1734.97	deg C	Temperature of air surrounding vehicle.	171

1.1.1.2 AUXIO1: Auxiliary Input Status1

PGN 65241
Transmission repetition rate: 100ms
ID: 0x18FED9XX Empfangsbotschaft TCU sendet und empfängt diese Botschaft
ID: 0x18FED903 Sendebotschaft

Byte	Bit	Bedeutung	Wertebereich	verknüpfte Funktion
1	1..2	AUXI/O #04 SPN 704	00 = Auxiliary channel off	ED43
			01 = Auxiliary channel on	
			10 = Error	
			11 = Not available	
	3..4	AUXI/O #03 SPN 703	00 = Auxiliary channel off	ED42
			01 = Auxiliary channel on	

Byte	Bit	Bedeutung	Wertebereich	verknüpfte Funktion
			10 = Error	
			11 = Not available	
	5..6	AUXI/O #02 SPN 702	00 = Auxiliary channel off	ED41
			01 = Auxiliary channel on	
			10 = Error	
			11 = Not available	
	7..8	AUXI/O #01 SPN 701	00 = Auxiliary channel off	ED40
			01 = Auxiliary channel on	
			10 = Error	
			11 = Not available	
2	1..2	AUXI/O #08 SPN 708	00 = Auxiliary channel off	ED47
			01 = Auxiliary channel on	
			10 = Error	
			11 = Not available	
	3..4	AUXI/O #07 SPN 707	00 = Auxiliary channel off	ED46
			01 = Auxiliary channel on	
			10 = Error	
			11 = Not available	
	5..6	AUXI/O #06 SPN 706	00 = Auxiliary channel off	ED45
			01 = Auxiliary channel on	
			10 = Error	
			11 = Not available	
	7..8	AUXI/O #05 SPN 705	00 = Auxiliary channel off	ED44
			01 = Auxiliary channel on	
			10 = Error	
			11 = Not available	
3	1..2	AUXI/O #12 SPN 712	00 = Auxiliary channel off	ED51
			01 = Auxiliary channel on	
			10 = Error	
			11 = Not available	
	3..4	AUXI/O #11 SPN 711	00 = Auxiliary channel off	ED50
			01 = Auxiliary channel on	
			10 = Error	
			11 = Not available	
	5..6	AUXI/O #10 SPN710	00 = Auxiliary channel off	ED49
			01 = Auxiliary channel on	
			10 = Error	
			11 = Not available	
	7..8	AUXI/O #09 SPN709	00 = Auxiliary channel off	ED48
			01 = Auxiliary channel on	
			10 = Error	
			11 = Not available	
4	1..2	AUXI/O #16 SPN 716	00 = Auxiliary channel off	ED55
			01 = Auxiliary channel on	
			10 = Error	
			11 = Not available	
	3..4	AUXI/O #15 SPN 715	00 = Auxiliary channel off	ED54
			01 = Auxiliary channel on	
			10 = Error	
			11 = Not available	
	5..6	AUXI/O #14	00 = Auxiliary channel off	ED53

Byte	Bit	Bedeutung	Wertebereich	verknüpfte Funktion
		SPN 714	01 = Auxiliary channel on	
			10 = Error	
			11 = Not available	
	7..8	AUXI/O #13 SPN 713	00 = Auxiliary channel off	ED52
			01 = Auxiliary channel on	
			10 = Error	
			11 = Not available	
5..6		AUXI/O Channel #1 SPN 1083	0 .. 64255 = ok	(ED56)
			64256 .. 65535 = not defined	
7..8		AUXI/O Cahnnel #2 SPN 1084	0 .. 64255 = ok	(ED57)
			64256 .. 65535 = not defined	

1.1.1.3 AUXIO1fromTCU: Auxiliary Output Status1

ID	DLC [Byte]	Sendeart	Zykluszeit	Sender	PGN
0x18FED903	8	cyclic	100	Transmission1	0xFED9

Name	Startbit	Länge [Bit]	Iniwert	Faktor	Offset	Min.	Max.	Einheit	Wertebereiche	SPN
AuxI_O04	0	2	0	1	0	0	3		VtSig_AuxI_O04	704
									0x0 - Auxiliary channel off	
									0x1 - Auxiliary channel on	
									0x2 - Error	
									0x3 - Not available	
AuxI_O03	2	2	0	1	0	0	3		Siehe AuxI_O04	703
AuxI_O02	4	2	0	1	0	0	3		Siehe AuxI_O04	702
AuxI_O01	6	2	0	1	0	0	3		Siehe AuxI_O04	701
AuxI_O08	8	2	0	1	0	0	3		Siehe AuxI_O04	708
AuxI_O07	10	2	0	1	0	0	3		Siehe AuxI_O04	707
AuxI_O06	12	2	0	1	0	0	3		Siehe AuxI_O04	706
AuxI_O05	14	2	0	1	0	0	3		Siehe AuxI_O04	705
AuxI_O12	16	2	0	1	0	0	3		Siehe AuxI_O04	712
AuxI_O11	18	2	0	1	0	0	3		Siehe AuxI_O04	711
AuxI_O10	20	2	0	1	0	0	3		Siehe AuxI_O04	710
AuxI_O09	22	2	0	1	0	0	3		Siehe AuxI_O04	709
AuxI_O16	24	2	0	1	0	0	3		Siehe AuxI_O04	716
AuxI_O15	26	2	0	1	0	0	3		Siehe AuxI_O04	715
AuxI_O14	28	2	0	1	0	0	3		Siehe	714

Name	Startbit	Länge [Bit]	Iniwert	Faktor	Offset	Min.	Max.	Einheit	Wertebereiche	SPN
									AuxI_O04	
AuxI_O13	30	2	0	1	0	0	3		Siehe AuxI_O04	713
AuxI_OChannel1	32	16	0	1	0	0	64255	counts	<keine>	1083
AuxI_OChannel2	48	16	0	1	0	0	64255	counts	<keine>	1084

1.1.1.4 CCVS: Cruise Control Vehicle Speed

PGN 65265
Transmission repetition rate: 100ms
Die TCU kann 2 CCVS-Botschaften empfangen (siehe Fahrzeugschnittstelle)
ID: 0x18FEF111 CCVSfromCC
ID: 0x18FEF127 CCVSfromXX

Byte	Bit	Bedeutung	Wertebereich	verknüpfte Funktion
1	1..2	Two speed axle switch SPN 69	00 = Low speed range	-
			01 = High speed range	
			10 = Error indicator	
			11 = not available	
	3..4	Parking brake switch SPN 70	00 = Parking brake not set	Kreuzschienenverteiler
			01 = Parking brake set	
			10 = Error indicator	
			11 = not available	
	5..6	Cruise Control Pause Switch SPN 1633	00 = Off	-
			01 = on	
			10 = Error indicator	
			11 = Take No Action	
	7..8	Park Brake Release Inhibit Request SPN 3807	00 = Parking Brake Release Inhibit not requested	-
			01 = Parking Brake Release Inhibit requested	
			10 = SAE reserved	
			11 = Unavailable	
2..3		Wheel-based vehicle speed SPN 84	0..64255 = 0..250,996 km/h	v_Fzg / i_Ha_adap
			65024..65279 = Error indicator	
			65280..65535 = not available	
4	1..2	Cruise control active SPN 595	00 = Cruise control switched off	Lastbestimmung
			01 = Cruise control switched on	
			10 = Error indicator	-
			11 = not available	-
	3..4	Cruise control enable switch 596	00 = Cruise control disabled	-
			01 = Cruise control enabled	
			10 = Error indicator	
			11 = not available	
	5..6	Brake switch SPN 597	00 = Brake pedal released	Kreuzschienenverteiler
			01 = Brake pedal depressed	-
			10 = Error indicator	-
			11 = not available	-
	7..8	Clutch switch SPN 598	00 = Clutch pedal released	-
			01 = Clutch pedal depressed	
			10 = Error indicator	
			11 = not available	

5	1..2	Cruise control set switch SPN 599	00 = Cruise control activator not in the position "set"	-
			01 = Cruise control activator in position "set"	
			10 = Error indicator	
			11 = not available	
	3..4	Cruise control coast switch SPN 600	00 = Cruise control activator not in position "coast"	-
			01 = Cruise control activator in position "coast"	
			10 = Error indicator	
			11 = not available	
	5..6	Cruise control resume switch SPN 601	00 = Cruise control activator not in position "resume"	-
			01 = Cruise control activator in position "resume"	
			10 = Error indicator	
			11 = not available	
	7..8	Cruise control accelerate switch SPN 602	00 = Cruise control activator not in position "accelerate"	-
			01 = Cruise control activator in position "accelerate"	
			10 = Error indicator	
			11 = not available	
6		Cruise control set speed SPN 86	0..250 = 0..250 km/h	-
			254 = Error indicator	
			255 = not available	
7	1..5	PTO state SPN 976	00000 = Off / Disabled	-
			00001 = Hold	
			00010 = Remote Hold	
			00011 = Standby	
			00100 = Remote Standby	
			00101 = Set	
			00110 = Decelerate / Coast	
			00111 = Resume	
			01000 = Accelerate	
			01001 = Accelerate Override	
			01010 = Preprogrammed set speed 1	
			01011 = Preprogrammed set speed 2	
			01100 = Preprogrammed set speed 3	
			01101 = Preprogrammed set speed 4	
			01110 = Preprogrammed set speed 5	
			01111 = Preprogrammed set speed 6	
			10000 = Preprogrammed set speed 7	
			10001 = Preprogrammed set speed 8	
			10010..11110 = Not defined	
			11111 = not available	
	6..8	Cruise control state SPN 527	000 = Off / Disabled	-
			001 = Hold	
			010 = Accelerate	
			011 = Decelerate / Coast	
			100 = Resume	
			101 = Set	
			110 = Accelerate override	
			111 = not available	

8	1..2	Idle increment switch SPN 968	00 = off	-
			01 = on	
			10 = Error indicator	
			11 = not available	
	3..4	Idle decrement switch SPN 967	00 = off	-
			01 = on	
			10 = Error indicator	
			11 = not available	
	5..6	Engine test mode switch SPN 966	00 = off	-
			01 = on	
			10 = Error indicator	
			11 = not available	
	7..8	Engine shutdown override switch SPN 1237	00 = off	-
			01 = on	
			10 = Error indicator	
			11 = not available	

1.1.1.5 CM1 Cab Message 1

PGN 57344
Transmission repetition rate: 1s
ID: 0x18E00010

Byte	Bit	Bedeutung	Wertebereich	Bemerkung
1		Requested Percent Fan Speed SPN 986	0..250 = 0..100 % (0,4%/Bit)	Fan request of Gearbox to Cooling system
			254 = Error indicator	
			255 = not available	
2..3		Cab Interior Temperature Command SPN 1691	0..64255 = -273..1734.96875	-
			64256..65535 = Error Indicator	
4	1..2	Auxiliary Heater Coolant Pump Request SPN 1684	00 = Deactivate water pump	-
			01 = Activate water pump	
			10 = Reserved	
			11 = Dont't care	
	3..4	Battery Main Switch Hold Request SPN 1682	00 = Release Battery Main Switch	-
			01 = Hold Battery Main Switch	
			10 = undefined	
			11 = Dont't care	
	5..6	Operator Seat Direction Switch SPN 1714	00 = Operator seat not facing forward	-
			01 = Operator seat is facing forward	
			10 = Error	
			11 = Not Available	
	6..7	Seat Belt Switch SPN 1856	00 = NOT Buckled	-
			01 = OK , Seat Belt is buckled	
			10 Error - Switch state cannot be determined	
			11 = Not Available	
5	1..2	not defined		
	3..4	Vehicle Limiting Speed Governor Decrement Switch SPN 1655	00 = Switch in the off State	-
			01 = Switch in the on state - increase	
			10 = Error	
			11 = Not Available	
	5..6	Vehicle Limiting Speed Governor	00 = Switch in the off State	-
			01 = Switch in the on state - increase	

		Increment Switch SPN 1654	10 = Error 11 = Not Available	
	7..8	Vehicle Limiting Speed Governor Enable Switch SPN 1653	00 = Switch disabled 01 = Switch enabled 10 = Error 11 = Not Available	-
6	1..2	Diesel Particulate Filter Regeneration Inhibit Switch SPN 3695	00 = not active 01 = active 10 = error 11 = Not Available	-
	3..4	Diesel Particulate Filter Regeneration Force Switch SPN 3696	00 = not active 01 = active 10 = error 11 = Not Available	-
	5..6	Automatic Gear Shifting Enable Switch SPN 1666	00 = Automated Gear Shifting is disabled 01 = Automated Gear Shifting is enabled 10 = Error 11 = Not Available	-
	7..8	Engine Automatic Start Enable Switch SPN 1656	00 = Switch in the off State 01 = Switch in the on state 10 = Error 11 = Not Available	-
7	1..4	Auxiliary Heater Mode Request SPN 1683	0000 = De-activate auxiliary heater 0001 = Off due to ADR per European Regulations for Trasport hazardous materials 0010 = Economy mode 0100-1101 = Not defined 1110 Reserved 1111 = Don't care	-
	5..6	Request Engine Zone Heating SPN 1685	00 = Do not neat engine zone 01 = Heat engine zone 10 = Reserved 11 = Dont't care	-
	7..8	Request Cab Zone Heating SPN 1686	00 = Do not cab engine zone 01 = Heat cab zone 10 = Reserved 11 = Dont't care	-
8		Selected Maximum Vehicle Speed Limit SPN 2596	0..250 254 = Error indicator 255 = not available	-

1.1.1.6 CVW Combination Vehicle Weight

ID	DLC [Byte]	Sendeart	Zykluszeit	Sender	PGN
0x18FD680B	8	noMsgSendType	0	BrakesSystemController	0xFD68

Name	Start bit	Länge [Bit]	Iniwert	Faktor	Offset	Min	Max	Einheit	Kommentar	SPN
PoweredVehicleWeight	0	16	0	10	0	0	64250	kg	Total mass imposed by the tires of the powered	1585

									vehicle on the road surface. Does not include the trailer.	
GrossCombinationVehicleWeight	16	16	0	10	0	0	64250	kg	The total weight of the truck and all attached trailers.	1760

Transmission Repetition Rate: On request
Data Length: Variable
Extended Data Page: 0
Data Page: 0
PDU Format: 254
PDU Specific: 112 PGN Supporting Information:
Default Priority: 6
Parameter Group Number: 65136 (0x00FE70)

1.1.1.7 DM1: (Diagnostic Message 1)

Reference: 5.7.1
Transmission repetition rate: when active 1 s to the FFR or on request
ID: 0x18FECA03 (only one fault occured)
0x18ECFF03 (broadcast announce message)
0x18EBFF03 (packet 1-255)

Byte	**Kenn-zeichnung**	**Bit**	**Bedeutung**	**Referenc e**	**Wertebereich**	**Bemerkung**
1	(a)	1..2	Protect lamp status	5.7.1.1	00 = Lamp off	**Initialisierung** mit
					01 = Lamp on	Defaultwert aus
					11= signal not available	J1939_DMxx_D.DMx_Lampen_Default
		3..4	Amber warning lamp status	5.7.1.2	00 = Lamp off	**Initialisierung** mit
					01 = Lamp on	Defaultwert aus
					11= signal not available	J1939_DMxx_D.DMx_Lampen_Default
		5..6	Red stop lamp status	5.7.1.3	00 = Lamp off	**Initialisierung** mit
					01 = Lamp on	Defaultwert aus
					11= signal not available	J1939_DMxx_D.DMx_Lampen_Default
		7..8	Malfunction indicator lamp status	5.7.1.4	00 = Lamp off	**Initialisierung** mit
					01 = Lamp on	Defaultwert aus
					11= signal not available	J1939_DMxx_D.DMx_Lampen_Default
2	(a)	1..8	reserved for future			auf 0xFF gesetzt
			SAE LAMP ASIGNMENT			
DTC (1.fault)						
3	(b)	1..8	SPN, 8 least significant bits of SPN	5.7.1.5		
			(MSB at bit 8)			
4	(b)	1..8	SPN, second byte of SPN	5.7.1.5		
			(MSB at bit 8)			
5	(c)	1..5	FMI	5.7.1.6		
			(Failure Mode Identifier, MSB at bit 5)			
	(b)	6..8	SPN, 3 most significant bits of SPN	5.7.1.5		

			(MSB at bit 8)			
6	(e)	1..7	Occurence Count	5.7.1.8	1..125 = Occurence 126 = Overflow 127 = not available	Overflow entspricht nicht der Norm
	(d)	8	SPN Conversion Method	5.7.1.7	0 = Version 4 1 = Version 1..3	wird immer 0 gesetzt
7						
8						
Different layout when several errors are active, then it becomes a multipackage message.						

1.1.1.8 DM1_TrqConv

ID DLC [Byte] Sendeart Zykluszeit Sender Kommentar PGN
0x18FECA43 22 noMsgSendType 0 -- Kein Sender -- Nur für Ausgabe der Temperatur zur Fehleranzeige auf Kundendisplay.... 0xFECA

Name	Startbit	Länge [Bit]	Initialwert	Faktor	Offset	Min	Max	SPN
ProtectLampStatus	0	2	0	1	0	0	3	987
AmberWarningLampStatus	2	2	0	1	0	0	3	624
RedStopLampState	4	2	0	1	0	0	3	623
MalfunctionIndicatorLampStatus	6	2	0	1	0	0	3	1213
FlashProtectLamp	8	2	0	1	0	0	3	3041
FlashAmberWarningLamp	10	2	0	1	0	0	3	3040
FlashRedStopLamp	12	2	0	1	0	0	3	3039
FlashMalfuncIndicatorLamp	14	2	0	1	0	0	3	3038
DTC1	16	32	0	1	0	0	4,29E+14	0
DTC2	48	32	0	1	0	0	4,29E+14	0
DTC3	80	32	0	1	0	0	4,29E+14	0
DTC4	112	32	0	1	0	0	4,29E+14	0
DTC5	144	32	0	1	0	0	4,29E+14	0

Specific DM1 to signal a high torque converter temperature

1.1.1.9 DM1_DrvRET

ID DLC [Byte] Sendeart Zykluszeit Sender Kommentar PGN
0x18FECA10 22 noMsgSendType 0 -- Kein Sender -- Nur für Ausgabe der Temperatur zur Fehleranzeige auf Kundendisplay.... 0xFECA

Name	Startbit	Länge [Bit]	Iniwert	Faktor	Offset	Min	Max	SPN
ProtectLampStatus	0	2	0	1	0	0	3	987
AmberWarningLampStatus	2	2	0	1	0	0	3	624
RedStopLampState	4	2	0	1	0	0	3	623
MalfunctionIndicatorLampStatus	6	2	0	1	0	0	3	1213
FlashProtectLamp	8	2	0	1	0	0	3	3041
FlashAmberWarningLamp	10	2	0	1	0	0	3	3040
FlashRedStopLamp	12	2	0	1	0	0	3	3039
FlashMalfuncIndicatorLamp	14	2	0	1	0	0	3	3038

DTC1	16	32	0	1	0	0	4,29E+14	0
DTC2	48	32	0	1	0	0	4,29E+14	0
DTC3	80	32	0	1	0	0	4,29E+14	0
DTC4	112	32	0	1	0	0	4,29E+14	0
DTC5	144	32	0	1	0	0	4,29E+14	0

Specific DM1 to signal a high retarder temperature

1.1.1.10 DM11: (Diagnostic Message 11)

ID	DLC [Byte]	Sendeart	Zykluszeit	Sender	PGN
0x18FED303	22	noMsgSendType	0	Transmission1	0xFED3

1.1.1.11 DM2: (Diagnostic Message 2)

Reference: 5.7.2
Transmission repetition rate: on request
ID: 0x18FECB03 (only one fault occured)
0x18ECFF03 (broadcast announce message)
0x18EBFF03 (packet 1-255)

Byte	**Kenn-zeichnung**	**Bit**	**Bedeutung**	**Referenc e**	**Wertebereich**	**Bemerkung**
1	(a)	1..2	Protect **lamp** status	5.7.1.1	00 = Lamp off	**Initialisierung** mit
					01 = Lamp on	Defaultwert aus
					11= signal not available	J1939_DMxx_D.DMx_Lampen_Default
		3..4	Amber warning **lamp** status	5.7.1.2	00 = Lamp off	**Initialisierung** mit
					01 = Lamp on	Defaultwert aus
					11= signal not available	J1939_DMxx_D.DMx_Lampen_Default
		5..6	Red stop **lamp** status	5.7.1.3	00 = Lamp off	**Initialisierung** mit
					01 = Lamp on	Defaultwert aus
					11= signal not available	J1939_DMxx_D.DMx_Lampen_Default
		7..8	Malfunction indicator **lamp** status	5.7.1.4	00 = Lamp off	**Initialisierung** mit
					01 = Lamp on	Defaultwert aus
					11= signal not available	J1939_DMxx_D.DMx_Lampen_Default
2	(a)	1..8	**reserved** for future			wird auf 0xFF gesetzt
			SAE LAMP ASIGNMENT			
DTC (1.fault)						
3	(b)	1..8	**SPN**, 8 least significant bits of SPN	5.7.1.5		
			(MSB at bit 8)			
4	(b)	1..8	**SPN**, second byte of SPN	5.7.1.5		
			(MSB at bit 8)			
5	(c)	1..5	**FMI**	5.7.1.6		
			(Failure Mode Identifier, MSB at bit 5)			
	(b)	6..8	**SPN**, 3 most	5.7.1.5		

			significant bits of SPN (MSB at bit 8)			
6	(e)	1..7	**Occurence Count**	5.7.1.8	1..125 = Occurence 126 = Overflow 127 = not available	Overflow entspricht nicht der Norm
	(d)	8	**SPN Conversion Method**	5.7.1.7	0 = Version 4 1 = Version 1..3	wird immer 0 gesetzt
7						
8						
Different layout when more than 1 error is active						

1.1.1.12 DM3: (Diagnostic Message 3)

ID	DLC [Byte]	Sendeart	Zykluszeit	Sender	PGN
0x18FECC03	22	noMsgSendType	0	Transmission1	0xFECC

1.1.1.13 DM4: (Diagnostic Message 4):

Reference: 05.07.2004
Transmission repetition rate: on request
ID: 0x18FECD03

Byte	Bit	Bedeutung	Reference	Wertebereich	Bemerkung
1	1..8	**Freeze Frame Length**	5.7.4.1		Anzahl der nachfolgenden Bytes ohne "Freeze Frame Length"-Byte
2	1..8	**SPN**, 8 least significant bits of SPN (MSB at bit 8)	5.7.1.5		
3	1..8	**SPN**, second byte of SPN (MSB at bit 8)	5.7.1.5		
4	1..5	**FMI** (Failure Mode Identifier, MSB at bit 5)	5.7.1.6		
	6..8	**SPN**, 3 most significant bits of SPN (MSB at bit 8)	5.7.1.5		
5	1..7	**Occurence Count**	5.7.1.8	1..125 = Occurence 126 = Overflow 127 = not available	Overflow entspricht nicht der Norm
	8	**SPN Conversion Method**	5.7.1.7	0 = Version 4 1 = Version 1..3	wird immer 0 gesetzt
6	1..8	**Engine Torque Mode**	SAE1939/71		definiert in EEC1
7	1..8	**Boost**	SAE1939/71		wird nicht unterstützt = 0xFF
8..9		**Engine Speed**	SAE1939/71	0..64255 = 0..8031,875 rpm 65024..65279 = Error indicator 65280..65535 = not available	Drehzahlerfassung
10		**Engine % Load**	SAE1939/71	0..124 = not used	Lastbestimmung

				125..250 = 0..125 % 254 = Error indicator 255 = not available	
11		**Engine coolant temperature**	SAE1939/71		wird nicht unterstützt = 0xFF
Dez 13		**Vehicle Speed**	SAE1939/71		wird nicht unterstützt = 0xFF
14-31		**environmental conditions**		Inhalt der Umweltbedingungen (18 Byte) (Speicherung erfolgt beim ersten Auftreten eines Fehlers)	Umweltblock wird kundenspezifisch jedem Fehler zugeordnet
32-49		**additional environmental conditions**		zusätzliche Umweltbedingungen (18 Byte) beim letzten Wechsel des Fehlerzustandes von aktiv nach passiv	für jeden Fehler wird autom.ein zusätzl, Umweltbedingungsblock im Fehlerspeicher mit abgelegt

1.1.1.14 DM1-Hinweismeldung (Diagnostic Message 1- information tip):

Reference: 5.7.1 in Analogie mit DM1
Transmission repetition rate: when active; 1 s to the FFR
ID: 0x18FECAxx
xx = 0, 0x03 (Transmission), 0x10(Retarder)

CAN Byte	**Kenn-zeichnung**	**Bit**	**Bedeutung**	**Bemerkung (Werte im Fehlerfall)**
1	(a)	1..8	**Lamp status**	**nur Initialisierung** mit 0x00
2	(a)	1..8	**reserved** for future (SAE LAMP ASIGNMENT)	0xFF
DTC (1.information tip)				
3	(b)	1..8	**SPN** most significant byte of SPN (MSB at bit 8)	
4	(b)	1..8	**SPN** (second part of SPN)	
5	(c)	1..5	**FMI** (Failure Mode Identifier, MSB at bit 5)	
	(b)	6..8	**SPN** 3 least significant bits of SPN (MSB at bit 8)	
6	(d)	1..7	**Occurence Count**	111 1111bin = 0x7F
	(e)	8	**SPN Conversion Method**	wird auf 0 gesetzt
7		**either** next DTC frame (like CAN Byte 3) **or** in case of no more error/information tips 0xFF		
8		**either** next DTC frame (like CAN Byte 4) **or** in case of no more error/information tips 0xFF		

Specific DM1 to signal a retarder limitation because of high temperature

1.1.1.15 DM1-Hinweismeldung nach MAN (Diagnostic Message 1- information tip):

Reference: 5.7.1 in Analogie mit DM1

Transmission repetition rate: when active; 1 s to the FFR
ID: 0x18FECAxx
xx = 0, 0x03 (Transmission), 0x10(Retarder)

CAN Byte	Kenn-zeichnung	Bit	Bedeutung	Bemerkung (Werte im Fehlerfall)
1	(a)	1..8	**Lamp status**	**nur Initialisierung** mit 0x00
2	(a)	1..8	**reserved** for future (SAE LAMP ASIGNMENT)	immer 0xFF
DTC (1.information tip)				
3	(b)	1..4	**SPN** 4 most significant bits of SPN (MSB at bit 4)	
	(c)	5..8	**Priority** (according to table above)	
4	(b)	1..8	**SPN** (second part of SPN)	
5		1..5	**FMI** (Failure Mode Identifier, MSB at bit 5)	
	(b)	6..8	**SPN** 3 least significant bits of SPN (MSB at bit 8)	
6	(d)	1..7	**Occurence Count**	111 1111bin = 0x7F (not available)
	(e)	8	**fault indication** (1=active, 0=passive)	
7		**either** next DTC frame (like CAN Byte 3) **or** in case of no more error/information tips 0xFF		
8		**either** next DTC frame (like CAN Byte 4) **or** in case of no more error/information tips 0xFF		

MAN specific DM1

1.1.1.16 EBC1: Electronic Brake Controller 1

PGN 61441
Transmission repetition rate: 100ms
ID: 0x18F0010B EBC1_from_ABS The TCU can receive 2 x EBC1
ID: 0x18F0011E EBC1_from_XX

Byte	Bit	Bedeutung	Wertebereich	verknüpfte Funktion
1	1..2	ASR engine control active SPN 561	00 = ASR engine control passive but installed	Kreuzschienenverteiler
			01 = ASR engine control active	Sonderschaltpunkte
			10 = Error indicator	-
			11 = not available	-
	3..4	ASR brake control active SPN 562	00 = ASR brake control passive but installed	Kreuzschienenverteiler
			01 = ASR brake control active	Sonderschaltpunkte
			10 = Error indicator	-
			11 = not available	-
	5..6	ABS active SPN 563	00 = ABS passive but installed	Kreuzschienenverteiler
			01 = ABS active	Sonderschaltpunkte
			10 = Error indicator	-
			11 = not available	-
	7..8	EBS brake switch SPN 1121	00 = Brake pedal is not being pressed	Kreuzschienenverteiler
			01 = Brake pedal is being pressed	Topografie, Freigabe
			10 = Error indicator	

			11 = not available	
2		Brake pedal position SPN 521	0..250 = 0..100 %	Gangfreigabe
			254 = Error indicator	Retarderanforderung
			255 = not available	NBS TOPO
3	1..2	ABS offroad switch SPN 575	00 = ABS offroad switch passive	supported
			01 = ABS offroad switch active	
			10 = Error indicator	
			11 = not available	
	3..4	ASR offroad switch SPN 576	00 = ASR offroad switch passive	supported
			01 = ASR offroad switch active	
			10 = Error indicator	
			11 = not available	
	5..6	ASR "hill holder" switch SPN 577	00 = ASR "hill holder" switch passive	-
			01 = ASR "hill holder" switch active	
			10 = Error indicator	
			11 = not available	
	7..8	Traction control override switch SPN 1238	00 = off	-
			01 = on	
			10 = Error indicator	
			11 = not available	
4	1..2	Accelerator interlock switch SPN 972	00 = off	-
			01 = on	
			10 = Error indicator	
			11 = not available	
	3..4	Engine derate switch SPN 971	00 = off	-
			01 = on	
			10 = Error indicator	
			11 = not available	
	5..6	Auxiliary engine shutdown switch SPN 970	00 = off	-
			01 = on	
			10 = Error indicator	
			11 = not available	
	7..8	Remote accelerator enable switch SPN 969	00 = off	-
			01 = on	
			10 = Error indicator	
			11 = not available	
5		Engine retarder selection SPN 973	0..250 = 0..100 %	-
			254 = Error indicator	
			255 = not available	
6	1..2	ABS fully operational SPN 1243	00 = ABS not fully operational	Kreuzschienenverteiler
			01 = ABS fully operational	
			10 = Error indicator	
			11 = not available	
	3..4	EBS red warning state SPN 1439	00 = off	-
			01 = on	
			10 = Error indicator	
			11 = not available	
	5..6	ABS/EBS amber warning state SPN 1438	00 = off	-
			01 = on	
			10 = Error indicator	
			11 = not available	
	7..8	ATC/ASR	00 = off	-

		Information Signal SPN 1793	01 = on	
			10 = Reserved	
			11 = Take no action	
7		Source address of controlling device for brake control SPN 1481	0..253 = siehe	-
			J1939 Source Addresses	
			254 = Error indicator	
			255 = not available	
8	1..2	Not defined		-
	3..4	Halt brake switch SPN 2911	00 = Halt brake switch passive	-
			01 = Halt brake switch active	
			10 = Error	
			11 = not available	
	5..6	Trailer ABS Status SPN 1836	00 = Trailer ABS Status Information Available But Not Active	-
			01 = Trailer ABS Active	
			10 = Reserved	
			11 = Trailer ABS Status Information Not Available or Parameter Not Supported	
	7..8	Tractor-Mounted Trailer ABS Warning Signal SPN 1792	00 = off	-
			01 = on	
			10 = Reserved	
			11 = Take no action	

1.1.1.17 EBC3: Wheel Application Pressure High Range Information

PGN 65197
Transmission repetition rate: 100 ms
ID: 0x18FEAD0B

Byte	Bit	Bedeutung	Wertebereich	verknüpfte Funktion
1		Brake pressure front axle, left wheel SPN 1091	0..250 = 0..1250 kPa	NBS
			254 = Error indicator	Topographie
			255 = not available	
2		Brake pressure front axle, right wheel SPN 1092	0..250 = 0..1250 kPa	NBS
			254 = Error indicator	Topographie
			255 = not available	
3		Brake pressure rear axle #1, left wheel SPN 1093	0..250 = 0..1250 kPa	NBS
			254 = Error indicator	
			255 = not available	
4		Brake pressure rear axle #1, right wheel SPN 1094	0..250 = 0..1250 kPa	NBS
			254 = Error indicator	
			255 = not available	
5		Brake, rear axle #2, left wheel SPN 1095	0..250 = 0..1250 kPa	-
			254 = Error indicator	
			255 = not available	
6		Brake, rear axle #2, right wheel SPN 1096	0..250 = 0..1250 kPa	-
			254 = Error indicator	
			255 = not available	
7		Brake, rear axle #3, left wheel SPN 1097	0..250 = 0..1250 kPa	-
			254 = Error indicator	
			255 = not available	
8		Brake, rear axle #3, right wheel SPN 1098	0..250 = 0..1250 kPa	-
			254 = Error indicator	
			255 = not available	

1.1.1.18 EBC5: Electronik Brake Controller 5

PGN 64964
Transmission repetition rate: 100ms
ID: 0x00FDC4

Byte	Bit	Bedeutung	Wertebereich	verknüpfte Funktion
1	1..2	Brake Temperature Warning SPN 3839		-
1	3..5	Halt Brake Mode SPN 2913	000 = Inactive	NBS / Kreuzschienenverteiler
			001 = Active	
			010 = Active, but not functioning properly	
			011 - 101 = Not defined	
			110 = Reserved	
			111 = Not available	
1	6..8	Hill Holder Mode SPN 2912		-
2	1..2	Foundation Brake Use SPN 2919		-
2	3..4	XBR System State SPN 2917		-
2	5..8	XBR Active Control Mode SPN 2918		-
3		XBR Accerleration Limit SPN 2921		-
4..8		nicht belegt		-

1.1.1.19 EC1: Engine Configuration 1

PGN 65251 **J1939**
ID: 0x18FEE300

Byte	Bit	Bedeutung	Wertebereich	verknüpfte Funktion
1..2		Engine speed at idle, point 1 SPN 188	0..64255 = 0..8031,875 rpm	-
			65024..65279 = Error indicator	
			65280..65535 = not available	
3		Percent torque at idle, point 1 SPN 539	0..124 = not used	-
			125..250 = 0..125 %	
			254 = Error indicator	
			255 = not available	
4..5		Engine speed at point 2 SPN 528	0..64255 = 0..8031,875 rpm	-
			65024..65279 = Error indicator	
			65280..65535 = not available	
6		Percent torque at point 2 SPN 540	0..124 = not used	-
			125..250 = 0..125 %	
			254 = Error indicator	
			255 = not available	
7..8		Engine speed at point 3 SPN 529	0..64255 = 0..8031,875 rpm	-
			65024..65279 = Error indicator	
			65280..65535 = not available	
9		Percent torque at point 3 SPN 541	0..124 = not used	-
			125..250 = 0..125 %	
			254 = Error indicator	

			255 = not available	
10..11		Engine speed at point 4 SPN 530	0..64255 = 0..8031,875 rpm	-
			65024..65279 = Error indicator	
			65280..65535 = not available	
12		Percent torque at point 4 SPN 542	0..124 = not used	-
			125..250 = 0..125 %	
			254 = Error indicator	
			255 = not available	
13..14		Engine speed at point 5 SPN 531	0..64255 = 0..8031,875 rpm	-
			65024..65279 = Error indicator	
			65280..65535 = not available	
15		Percent torque at point 5 SPN 543	0..124 = not used	-
			125..250 = 0..125 %	
			254 = Error indicator	
			255 = not available	
16..17		Engine speed at high idle point 6 SPN 532	0..64255 = 0..8031,875 rpm	-
			65024..65279 = Error indicator	
			65280..65535 = not available	
18..19		Gain (KP) of endspeed governor SPN 545	0..64255 = 50.2 % / rpm	-
			65024..65279 = Error indicator	
			65280..65535 = not available	
20..21		Reference engine torque SPN 544	0..64255 = 0..64255 Nm	Druckbestimmung
			65024..65279 = Error indicator	
			65280..65535 = not available	
22..23		Maximum momentary engine override speed, point 7 SPN 533	0..64255 = 0..8031,875 rpm	-
			65024..65279 = Error indicator	
			65280..65535 = not available	
24		Maximum momentary engine override time limit SPN 534	0 = no override of high idle allow.	-
			1..250 = 0,1..25 s	
			254 = Error indicator	
			255 = not applicable	
25		Requested speed control range lower limit SPN 535	0..250 = 0..2500 rpm	-
			254 = Error indicator	
			255 = not available	
26		Requested speed control range upper limit SPN 536	0..250 = 0..2500 rpm	-
			254 = Error indicator	
			255 = not available	
27		Requested torque control range lower limit SPN 537	0..124 = not used	-
			125..250 = 0..125 %	
			254 = Error indicator	
			255 = not available	
28		Requested torque control range upper limit SPN 538	0..124 = not used	-
			125..250 = 0..125 %	
			254 = Error indicator	
			255 = not available	
29..30		Extended Range, Requested Speed Control Range Upper Limit (Engine Configuration) SPN 1712	0..64255 = 0..8031,875 rpm	-
			65024..65279 = Error indicator	
			65280..65535 = not available	
31..32		Moment of Interia	0..64255 = 0..257,02 kg m²	-

		SPN 1794	65024..65279 = Error indicator	
			65280..65535 = not available	
33..34		Default Torque Limit SPN 1846	0..64255 = 0..64255 Nm	-
			65024..65279 = Error indicator	
			65280..65535 = not available	
35		Support Variable Rate TSC1 Message 3344	0x01 = 1000ms transmission rate	-
			0x02 = 750ms transmission rate	
			0x04 = 500ms transmission rate	
			0x08 = 250ms trabsmission rate	
			0x10 = 100ms transmission rate	
			0x20 = 50ms transmission rate	
			0x40 = 20ms transmission rate	
			0x80 = Reserved for SAE assignement (set to one)	
36		Support TSC1 Control Purpose Group 1 SPN 3345	0x01 = P1 - Accelerator Pedal/Operator Selection	-
			0x02 = P2 - Cruise Control	
			0x04 = P3 - PTO Governor	
			0x08 = P4 - Road Speed Governor	
			0x10 = P5 - Reserved for Assignment by SAE	
			0x20 = P6 - Reserved for Assignment by SAE	
			0x40 = P7 - Reserved for Assignment by SAE	
			0x80 = P8 - Reserved for Assignment by SAE	
37		Support TSC1 Control Purpose Group 2 SPN 3346	0x01 = P9 - Reserved for Assignment by SAE	-
			0x02 = P10 - Reserved for Assignment by SAE	
			0x04 = P11 - Reserved for Assignment by SAE	
			0x08 = P12 - Reserved for Assignment by SAE	
			0x10 = P13 - Reserved for Assignment by SAE	
			0x20 = P14 - Reserved for Assignment by SAE	
			0x40 = P15 - Reserved for Assignment by SAE	
			0x80 = P16 - Reserved for Assignment by SAE	
38		Support TSC1 Control Purpose Group 3 SPN 3347	0x01 = P17 - Reserved for Assignment by SAE	-
			0x02 = P18 - Reserved for Assignment by SAE	
			0x04 = P19 - Reserved for Assignment by SAE	
			0x08 = P20 - Reserved for Assignment by SAE	
			0x10 = P21 - Reserved for Assignment by SAE	
			0x20 = P22 - Reserved for Assignment by SAE	
			0x40 = P23 - Reserved for Assignment by SAE	
			0x80 = P24 - Reserved for Assignment by SAE	
39		Support TSC1 Control Purpose	0x01 = P25 - Reserved for Assignment by SAE	-

		Group 4 SPN 3348	0x02 = P26 - Reserved for Assignment by SAE	
			0x04 = P27 - Reserved for Assignment by SAE	
			0x08 = P28 - Reserved for Assignment by SAE	
			0x10 = P29 - Reserved for Assignment by SAE	
			0x20 = P30 - Reserved for Assignment by SAE	
			0x40 = P31 - Reserved for Assignment by SAE	
			0x80 = Not assignabale, must always be set to 1	

1.1.1.20 ECUID:

Message sends out ECU Specific data: Serial number, Partnumber, Location, Type and Manufacturer in ASCII signs

1.1.1.21 EEC1: Electronic Engine Controller 1

PGN 61444
Transmission repetition rate: engine speed dependant
ID: 0x0CF00400

Byte	Bit	Bedeutung	Wertebereich	verknüpfte Funktion
1	1..4	Status_EEC1 SPN 899	0000 = Low idle governor / no request (default mode)	Lastbestimmung
			0001 = Accelerator pedal / operator selection	
		(Engine and Retarder Torque Mode)	0010 = Cruise control	
			0011 = PTO governor	
			0100 = Road speed governor	
			0101 = ASR control	
			0110 = Transmission control	
			0111 = ABS control	
			1000 = Torque limiting	
			1001 = High speed governor	
			1010 = Braking system	
			1011 = Remote accelerator	
			1100 = not defined	
			1101 = not defined	
			1110 = other	
			1111 = not available	
	5..8	Actual Engine - Percent Torque High Resolution SPN 4154	0000 = +0,000%	-
			0001 =+0,125%	
			0010 = +0,250%	
			0011 = +0,375%	
			0100 = +0,500%	
			0101 = +0,625%	
			0110 = +0,750%	
			0111 = 0,875%	
			1000 - 1111 = not available	
2		Driver's demand engine - percent torque SPN 512	0..124 = not used	Lastbestimmung
			125..250 = 0..125 %	
			254 = Error indicator	
			255 = not available	
3		Actual engine - percent torque	0..124 = not used	Druckbestimmung Mot_KL_adap
			125..250 = 0..125 %	

		SPN 513	254 = Error indicator	
			255 = not available	
4..5		Engine speed SPN 190	0..64255 = 0..8031,875 rpm	Drehzahlerfassung
			65024..65279 = Error indicator	
			65280..65535 = not available	
6		Source address of controlling device for engine control SPN 1483	0..253 = siehe	-
			J1939 Source Addresses	
			254 = Error indicator	
			255 = not available	
7	1..4	Engine Starter Mode SPN 1675	0000 = start not requested	-Engine Status
			0001 =starter active, gear not engaged	
			0010 = starter active, gear engaged	
			0011 = start finished; starter not active after having been actively engaged (after 50ms mode goes to 0000)	
			0100 = starter inhibited due to engine already running	
			0101 = starter inhibited due to engine not ready for start (preheating)	
			0110 = starter inhibited due to driveline engaged or other transmission inhibit	
			0111 = starter inhibited due to active immobilizer	
			1000 = starter inhibited due to starter over-temp	
			1001-1011 = Reserved	
			1100 = starter inhibited - reason unknown	
			1101 = error (legacy implementation only, use 1110)	
			1110 = error	
			1111 = not available	
	5..8	Not defined		-
8		Engine Demand - Percent torque SPN 2432	0..250 = -125..125 %	-
			254 = Error indicator	
			255 = not available	

1.1.1.22 EEC2: Electronic Engine Controller 2

PGN 61443
Transmission repetition rate: 50 ms
ID: 0x0CF00300

Byte	Bit	Bedeutung	Wertebereich	verknüpfte Funktion
1	1..2	Accelerator pedal 1 low idle switch SPN 558	00 = AP not in low idle condition	-
			01 = AP in low idle condition	
			10 = Error indicator	
			11 = not available	
	3..4	Accelerator pedal kickdown switch SPN 559	00 = Kickdown passive	Kreuzschienenverteiler
			01 = Kickdown active	
			10 = Error indicator	
			11 = not available	
	5..6	Road speed limit status	00 = Active	-
			01 = Not Active	

		SPN 1437	10 = Error	
			11 = Not available	
	7..8	Accelerator Pedal 2 Low Idle Switch SPN 2970	00 = AP not in low idle condition	-
			01 = AP in low idle condition	
			10 = Error indicator	
			11 = not available	
2		Accelerator pedal position 1 SPN 91	0..250 = 0..100 %	Lastbestimmung
			254 = Error indicator	
			255 = not available	
3		Percent load at current speed SPN 92	0..125 = 0..125 %	Druckbestimmung Mot_KL_adap
			126..250 = not used	
			254 = Error indicator	
			255 = not available	
4		Remote accelerator SPN 974	0..250 = 0..100 %	-
			254 = Error indicator	
			255 = not available	
5		Accelerator pedal position 2 SPN 29	0..250 = 0..100 %	-
6	1..2	Vehicle Acceleration Rate limit Status SPN 2979	00 = Limit not active	virtuelle Last
			01 = Limit active	
			10 = reserved	
			11 = not available	
6	3..4	Momentary Enginge Maximum Power Enable Feedback SPN 5021	00 = disabled	-
			01 = supported	
			10 = reserved	
			11 = don't care	
7		actual max avail Engine perc Trq SPN 3357	0..250 = 0..100%	-
8		Not defined		-

1.1.1.23 EEC3: Electronic Engine Controller 3

PGN 65247
Transmission repetition rate: 250 ms (or engine speed dependent)
ID: 0x18FEDF00

Byte	Bit	Bedeutung	Wertebereich	verknüpfte Funktion
1		Nominal friction - percent torque SPN 514	0..250 = -125..125 %	Druckbestimmung
			254 = Error indicator	
			255 = not available	
2..3		Engine's desired operating speed SPN 515	0..64255 = 0..8031,875 rpm	-
			65024..65279 = Error indicator	
			65280..65535 = not available	
4		Engine's operating speed asymmetry adjustment SPN 519	0..250 = siehe Norm	-
			254 = Error indicator	
			255 = not available	
5		Estimated Engine Parasitic Losses - Percent Torque SPN 2978	0..124 = not used	Druckbestimmung
			125..250 = 0..125 %	
			251 = Estimated Engine Parasitic Losses - Percent Torque sind bereits in Nominal Friqtion - Percent Torque enthalten (*)	
			254 = Error indicator	
			255 = not available	

6..7		Aftertreatment 1 Exhaust Gas Mass Flow SPN 3236	0..64255 = 0..12851 kg/h	-
			65024..65279 = Error indicator	
			65280..65535 = not available	
8	1..2	Aftertreatment 1 Intake Dew Point SPN 3237	00 = Not exceeded the dew point	-
			01 = Exceeded the dew point	
			10 = Error	
			11 = Not available	
	3..4	Aftertreatment 1 Exhaust Dew Point SPN 3238	00 = Not exceeded the dew point	-
			01 = Exceeded the dew point	
			10 = Error	
			11 = Not available	
	5..6	Aftertreatment 2 Intake Dew Point SPN 3239	00 = Not exceeded the dew point	-
			01 = Exceeded the dew point	
			10 = Error	
			11 = Not available	
	7..8	Aftertreatment 2 Exhaust Dew Point SPN 3240	00 = Not exceeded the dew point	-
			01 = Exceeded the dew point	
			10 = Error	
			11 = Not available	

1.1.1.24 ERC1fromTCU: Electronic Retarder Controller 1 (Driveline Retarder)

PGN 61440
Transmission repetition rate: 100ms
ID: 0x18F00010 ERC1fromTCU

Byte	Bit	Bedeutung	Wertebereich	Bemerkung
1	1..4	Status_ERC1 SPN 900	0000 = Low idle governor / no request (default mode)	-Current Retarder Mode
		(Engine and Retarder Torque Mode)	0001 = Accelerator pedal / operator selection	
			0010 = Cruise control	
			0011 = PTO governor	
			0100 = Road speed governor	
			0101 = ASR control	
			0110 = Transmission control	
			0111 = ABS control	
			1000 = Torque limiting	
			1001 = High speed governor	
			1010 = Braking system	
			1011 = Remote accelerator	
			1100 = not defined	
			1101 = not defined	
			1110 = other	
			1111 = not available	
	5..6	Retarder enable - brake assist switch SPN 571	00 = Retarder - brake assist disabled	Brake assist possible
			01 = Retarder - brake assist enabled	
			10 = Error indicator	
			11 = not available	
	7..8	Retarder enable - shift assist switch SPN 572	00 = Retarder shift assist disabled	Shift assist possible
			01 = Retarder - shift assist enabled	
			10 = Error indicator	
			11 = not available	
2		Actual retarder -	0..125 = -125..0 %	verknüpfte Variable wird mit

Byte	Bit	Bedeutung	Wertebereich	Bemerkung
		percent torque SPN 520	126..250 = not used 254 = Error indicator 255 = not available	i_Gg_Ret_ges multipliziert bei Sekundärretarder
3		Intended retarder - percent torque SPN 1085	0..125 = -125..0 % 126..250 = not used 254 = Error indicator 255 = not available	verknüpfte Variable wird mit i_Gg_Ret_ges multipliziert bei Sekundärretarder
4	1..2	Engine coolant load increase SPN 1082	00 = no coolant load increase 01 = coolant load increase possible 10 = Error indicator 11 = not available	Coolant load increase possible
	3..4	Retarder Requesting Brake Light SPN 1667	00 = Retarder is not requesting that brake lights are illuminated SPN 1667 01 = Retarder is requesting that brake lights are illuminated 10 = Reserved 11 = Not available/Take no action	
	5..6	Retarder Road Speed Limit Switch SPN 4233	00 = Road speed limiting by retarder is disabled 01 = Road speed limiting by retarder is enabled 10 = Error indicator 11 = Not available	
	7..8	Retarder Road Speed Exceeded Status SPN 4234	00 = Road speed is below threshold 01 = Road speed is above threshold and retarder is allowed to be activated 10 = Reserved 11 = Don't care/Take no action	
5		Source address of controlling device for retarder control SPN 1480	0..253 = siehe J1939 Source Addresses 254 = Error indicator 255 = not available	Source address of controlling device
6		Drivers demand retarder - percent torque SPN 1715	0..125 = -125..0 % 126..250 = not used 254 = Error indicator 255 = not available	Applikation : J1939_D.Sw_ERC1_ret_drv_dem_signalquelle
7		Retarder selection - non engine SPN 1716	0..250 = 0 %...100% 254 = Error indicator 255 = not available	Applikation : J1939_D.Sw_ERC1_ret_select_signalquelle
8		Actual maximum available retarder - percent torque SPN 1717	0..125 = -125..0 % 126..250 = not used 254 = Error indicator 255 = not available	Bei Sekundärretarder multipliziert mit i_gg_linear

1.1.1.25 ERC1fromENGRET: Electronic Retarder Controller (Engine_Retarder)

PGN 61440
Transmission repetition rate: 100ms
ID: 0x18F0000F

Byte	Bit	Bedeutung	Wertebereich	verknüpfte Funktion
1	1..4	Status_ERC1 SPN 900	0000 = Low idle governor / no request (default mode)	Kreuzschienenverteiler
		(Engine and Retarder Torque Mode)	0001 = Accelerator pedal / operator selection	

			0010 = Cruise control	
			0011 = PTO governor	
			0100 = Road speed governor	
			0101 = ASR control	
			0110 = Transmission control	
			0111 = ABS control	
			1000 = Torque limiting	
			1001 = High speed governor	
			1010 = Braking system	
			1011 = Remote accelerator	
			1100 = not defined	
			1101 = not defined	
			1110 = other	
			1111 = not available	
	5..6	Retarder enable - brake assist switch SPN 571	00 = Retarder - brake assist disabled	-
			01 = Retarder - brake assist enabled	
			10 = Error indicator	
			11 = not available	
	7..8	Retarder enable - shift assist switch SPN 572	00 = Retarder shift assist disabled	-
			01 = Retarder - shift assist enabled	
			10 = Error indicator	
			11 = not available	
2		Actual retarder - percent torque SPN 520	0..125 = -125..0 %	Druckbestimmung
			126..250 = not used	
			254 = Error indicator	
			255 = not available	
3		Intended retarder - percent torque SPN 1085	0..125 = -125..0 %	-
			126..250 = not used	
			254 = Error indicator	
			255 = not available	
4	1..2	Engine coolant load increase SPN 1082	00 = no coolant load increase	-
			01 = coolant load increase possible	
			10 = Error indicator	
			11 = not available	
	3..4	Retarder Requesting Brake Light SPN 1667	00 = Retarder is not requesting that brake lights are illuminated SPN 1667	-
			01 = Retarder is requesting that brake lights are illuminated	
			10 = Reserved	
			11 = Not available/Take no action	
	5..6	Retarder Road Speed Limit Switch SPN 4233	00 = Road speed limiting by retarder is disabled	
			01 = Road speed limiting by retarder is enabled	
			10 = Error indicator	
			11 = Not available	
	7..8	Retarder Road Speed Exceeded Status SPN 4234	00 = Road speed is below threshold	-
			01 = Road speed is above threshold and retarder is allowed to be activated	
			10 = Reserved	
			11 = Don't care/Take no action	
5		Source address of controlling device for	0..253 = siehe	-
			J1939 Source Addresses	

		retarder control SPN 1480	254 = Error indicator	
			255 = not available	
6		Drivers demand retarder - percent torque SPN 1715	0..125 = -125..0 %	-
			126..250 = not used	
			254 = Error indicator	
			255 = not available	
7		Retarder selection - non engine SPN 1716	0..250 = 0 %...100%	-
			254 = Error indicator	
			255 = not available	
8		Actual maximum available retarder - percent torque SPN 1717	0..125 = -125..0 %	-
			126..250 = not used	
			254 = Error indicator	
			255 = not available	

1.1.1.26 ET1: Engine Temperature 1

PGN 65262
Transmission repetition rate: 1s
ID: 0x18FEEE00

Byte	Bit	Bedeutung	Wertebereich	verknüpfte Funktion
1		Engine Coolant Temperature SPN 110	1°C/Bit, -40°C offset	Retarder-Rückregelung
			-40°C to 210°C	
2		Engine Fuel Temperature 1 SPN 174		-
3..4		Engine Oil Temperature 1 SPN 175		-
5..6		Engine Turbocharger Oil Temperature SPN 176		-
7		Engine Intercooler Temperature SPN 52		-
8		Engine Intercooler Thermostat Opening SPN 1134		-

1.1.1.27 ETC1: Electronic Transmission Controller 1 (ETC1fromTCU)

PGN 61442
Transmission repetition rate: 10ms
ID: 0x0CF00203

Byte	Bit	Bedeutung	Wertebereich	verknüpfte Variable
1	1..2	Driveline engaged SPN 560	00 = Driveline disengaged	supported
			01 = Driveline engaged	
			10 = Error indicator	
			11 = not available	
	3..4	Torque converter lockup engaged SPN 573	00 = Torque converter lockup disengaged	supported
			01 = Torque converter lockup engaged	
			10 = Error indicator	

			11 = not available	
	5..6	Shift in process SPN 574	00 = Shift is not in process	supported
			01 = Shift in process	
			10 = Error indicator	
			11 = not available	
	7..8	Torque Converter Lockup Transition in Process SPN 4816	00 = Transition is not in process	-
			01 = Transition is in process	
			10 = Error indicator	
			11 = Not available	
2..3		Output shaft speed SPN 191	0..64255 = 0..8031,875 rpm	supported
			65024..65279 = Error indicator	
			65280..65535 = not available	
4		Percent clutch slip SPN 522	0..250 = 0..100 %	-
			254 = Error indicator	
			255 = not available	
5	1..2	Momentary engine overspeed enable SPN 606	00 = AP not in low idle condition	-
			01 = AP in low idle condition	
			10 = Error indicator	
			11 = not available	
	3..4	Progressive shift disable SPN 607	00 = Kickdown passive	-
			01 = Kickdown active	
			10 = Error indicator	
			11 = not available	
	5..6	Momentary Engine Maximum Power Enable SPN 5015	00 = not requesting maximum power available	-
			01 = momentarily requesting maximum power available	
			10 = fault	
			11 = not available	
	7..8	Not defined		-
6..7		Input shaft speed SPN 161	0..64255 = 0..8031,875 rpm	supported
			65024..65279 = Error indicator	
			65280..65535 = not available	
8		Source address of controlling device for transmission control SPN 1482	0..253 = siehe J1939 Source Addresses	-
			254 = Error indicator	
			255 = not available	

1.1.1.28 ETC2: Electronic Transmission Controller 2 (ETC2fromTCU)

PGN 61445
Transmission repetition rate: 100ms
ID: 0x18F00503

Byte	Bit	Bedeutung	Wertebereich	Bemerkung
1		Selected gear SPN 524	0..250 = -125..125	123=R2; 124=R1; 125=N,NB; 126=V1,NBSV1; 127=V2;…; 131=V6;
			251 = park	
			254 = Error indicator	
			255 = not available	
2..3		Actual gear ratio SPN 526	0..64255 = 0..64,255	Berechnet aus Kennfeld (nur für Neutral-Gänge) und aktueller Gang. Multiplikation mit Vorschalt- und Nachschaltegetriebeübersetzung
			65024..65279 = Error indicator	
			65280..65535 = not available	
4		Current gear SPN 523	0..250 = -125..125	123=R2; 124=R1; 125=N,NB; 126=V1,NBSV1; 127=V2;…; 131=V6;
			251 = park	
			254 = Error indicator	
			255 = not available	

5..6		Transmission requested range SPN 162	1..254 = ASCII (2 bytes) 0 = Error indicator 65535 = not available	wird abgeleitet von FS_Stellung
7..8		Transmission current range SPN 163	1..254 = ASCII (2 bytes) 0 = Error indicator 65535 = not available	Normalfall = angeforderter Fahrbereich; bei Gangverlust = Neutral

1.1.1.29 ETC7: Electronic Transmission Controller 7

PGN 65098 **J1939**
Transmission repetition rate: 100ms (Zykluszeit einstellbar : J1939_D.SW_ETC7_Zykluszeit)
ID: 0x18FE4A03

Byte	Bit	Bedeutung	Wertebereich	Bemerkung
1	1..2	Transmission Current Range Display Blank State SPN 4176	00 = Not Blanked 01 = Blanked 10 = error 11 = not availabe	-
	3..4	Transmission Service Indicator SPN 4178	00 = Transmission Service Indicator is off 01 = Transmission Service Indicator is on continuously 10 = Transmission Service Indicator is flashing 11 = not availabe	-
	5..6	Transmission Requested Range Display Blank State SPN 1850	00 = inactive 01 = active 10 = error 11 = not availabe	-
	7..8	Transmission Requested Range Display Flash State SPN 1849	00 = inactive 01 = active 10 = error 11 = not availabe	supported
2	1..2	Transmission ready for brake release SPN 3086	00 = not ready 01 = ready 10 = error 11 = not availabe	Funktion entspricht Rollsperre, kann komlpett mit SW abeschaltet werden, siehe Doku
	3..4	Active Shift Console Indicator SPN 2945	00 = primary shift console 01 = secondary shift consol 10 = reserved 11 = not available	-
	5..6	Transmission Engine Crank Enable SPN 2900	00 = inhibited 01 = not inhibited 10 = error 11 =not available	je nach Applikation (SW_Crank_enable)
	7..8	Shift Inhibit Indicator SPN 1851	00 = Inactive; shift is not inhibited 01 = Active; shift is inhibited 10 = Reserved 11 = Take no action	-
3	1..2	Transm Mode 4 indicator SPN 2539	00 = Mode not active 01 = Mode active 10 = error 11 =not available	-
	3..4	Transm Mode 3 indicator	00 = Mode not active 01 = Mode active	-

Byte	Bit	Bedeutung	Wertebereich	Bemerkung
		SPN 2538	10 = error	
			11 =not available	
	5..6	Transm Mode 2 indicator SPN 2537	00 = Mode not active	-
			01 = Mode active	
			10 = error	
			11 =not available	
	6..7	Transm Mode 1 indicator SPN 2536	00 = Mode not active	-
			01 = Mode active	
			10 = error	
			11 =not available	
4		Transmission Requested Gear Feedback SPN 3289	0..250 = -125..125	-
			254 = Error indicator	
			255 = not available	
5	1..2	Transmission Mode 5 Indicator SPN 4250	00 = Mode not active	-
			01 = Mode active	
			10 = error	
			11 =not available	
	3..4	Transmission Mode 6 Indicator SPN 4251	00 = Mode not active	-
			01 = Mode active	
			10 = error	
			11 =not available	
	5..6	Transmission Mode 7 Indicator SPN 4252	00 = Mode not active	-
			01 = Mode active	
			10 = error	
			11 =not available	
	7..8	Transmission Mode 8 Indicator SPN 4253	00 = Mode not active	-
			01 = Mode active	
			10 = error	
			11 =not available	
6	1..2	Transmission Reverse Gear Shift Inhibit Status SPN 4261	00 = Reverse gear shifts are currently allowed	-
			01 = Reverse gear shifts are currently inhibited	
			10 = error	
			11 =not available	
	4..8	Not defined		
7..8		Not defined		

1.1.1.30 ETC8: Electronic Transmission Controller 8

PGN 61452
ID: 0x0CFFC803

Byte	Bit	Bedeutung	Wertebereich	Bemerkung
1..2		Torque Converter Ratio SPN 3030	0..64255 = 0..64,255	supported
			1000 = Torque converter locked	
			64256 = Brake Mode (Schub)	
			65024..65279 = Error indicator	
			65024..65279 = not available	
2..3		Transmission Clutch/Converter Input Speed SPN 5052	0..64255 = 0..8031,875 rpm	supported
			65024..65279 = Error indicator	
			65280..65535 = not available	

1.1.1.31 LFE: Liquid Fuel Economy

PGN 65266
Transmission repetition rate: 100ms
ID: 0x18FEF200

Byte	Bit	Bedeutung	Wertebereich	verknüpfte Funktion
1..2		Engine Fuel Rate SPN 183	0,05l/h per bit offset = 0	Statistikspeicher
			Range: 0-3212,75l/h	
3..4		Engine Instantaneous Fuel Economy SPN 184	0,001953125 km/l per bit offset = 0	-
			Range: 0-125,5 km/l	
5..6		Engine Average Fuel Economy SPN 185	0,001953125 km/l per bit offset = 0	-
			Range: 0-125,5 km/l	
7		Engine Throttle Position SPN 51		-
8		Engine Throttle 2 Position SPN 3673		-

1.1.1.32 RC_Eng: Retarder Configuration (Engine_Retarder):

PGN 65249
Transmission repetition rate: On request
ID: 0x18FEE10F oder 0x18FEE129

Byte	Bit	Bedeutung	Wertebereich	verknüpfte Funktion
1	1..4	Retarder Type SPN 901	0000 = Electric / Magnetic	-
			0001 = Hydraulic	
			0010 = Cooled Friction	
			0011 = Compression Release (Engine retarder)	
			0100 = Exhaust	
			0101..1101 = not defined	
			1110 = other	
			1111 = not available	
	5..8	Retarder location SPN 902	0000 = Engine Compression Release Brake (Engine rpm)	-
			0001 = Engine Exhaust Brake (Exhaust pressure)	
			0010 = Transmission Input (Engine rpm)	
			0011 = Transmission Output (Output Shaft rpm)	
			0100 = Driveline (Output Shaft rpm)	
			0101 = Trailer (Vehicle speed)	
			0110..1101 = not defined	
			1110 = other	
			1111 = not available	
2		Retarder control method SPN 557	0 = continuous control	-
			1 = On / off control	
			2..250 = Number of steps	
			254 = Error indicator	
			255 = not available	
3..4		Retarder speed at idle, point 1 SPN 546	0..64255 = 0..8031,875 rpm	-
			65024..65279 = Error indicator	
			65280..65535 = not available	
5		Percent torque at idle,	0..124 = not used	-

		point 1 SPN 551	125..250 = 0..125 % 254 = Error indicator 255 = not available	
6..7		Maximum Retarder speed, point 2 SPN 548	0..64255 = 0..8031,875 rpm 65024..65279 = Error indicator 65280..65535 = not available	-
6		Percent torque at maximum speed, point 2 SPN 552	0..124 = not used 125..250 = 0..125 % 254 = Error indicator 255 = not available	-
9..10		Retarder speed at point 3 SPN 549	0..64255 = 0..8031,875 rpm 65024..65279 = Error indicator 65280..65535 = not available	-
11		Percent torque at point 3 SPN 553	0..124 = not used 125..250 = 0..125 % 254 = Error indicator 255 = not available	-
12..13		Retarder speed at point 4 SPN 550	0..64255 = 0..8031,875 rpm 65024..65279 = Error indicator 65280..65535 = not available	-
14		Percent torque at point 4 SPN 554	0..124 = not used 125..250 = 0..125 % 254 = Error indicator 255 = not available	-
15..16		Retarder speed at peak torque, point 5 SPN 547	0..64255 = 0..8031,875 rpm 65024..65279 = Error indicator 65280..65535 = not available	-
17..18		Reference Retarder torque SPN 556	0..64255 = 0..64255 Nm 65024..65279 = Error indicator 65280..65535 = not available	Druckbestimmung
19		Percent torque at peak torque, point 5 SPN 555	0..124 = not used 125..250 = 0..125 % 254 = Error indicator 255 = not available	-

1.1.1.33 RC_Drv: Retarder Configuration (Driveline Retarder)

PGN 65249
Transmission repetition rate: 5 s oder on request
ID: 0x18FEE110 RC_Drv

Byte	Bit	Bedeutung	Wertebereich	Bemerkung
1	1..4	Retarder Type SPN 901	0000 = Electric / Magnetic	wird immer 0001 gesendet
			0001 = Hydraulic	
			0010 = Cooled Friction	
			0011 = Compression Release (Engine retarder)	
			0100 = Exhaust	
			0101..1101 = not defined	
			1110 = other	
			1111 = not available	
	5..8	Retarder location SPN 902	0000 = Engine Compression Release Brake (Engine rpm)	0010 or 0100
			0001 = Engine Exhaust Brake (Exhaust pressure)	

Byte	Bit	Bedeutung	Wertebereich	Bemerkung
			0010 = Transmission Input (Engine rpm)	
			0011 = Transmission Output (Output Shaft rpm)	
			0100 = Driveline (Output Shaft rpm)	
			0101 = Trailer (Vehicle speed)	
			0110..1101 = not defined	
			1110 = other	
			1111 = not available	
2		Retarder control method SPN 557	0 = continuous control	0
			1 = On / off control	
			2..250 = Number of steps	
			254 = Error indicator	
			255 = not available	
3..4		Retarder speed at idle, point 1 SPN 546	0..64255 = 0..8031,875 rpm	optional
			65024..65279 = Error indicator	
			65280..65535 = not available	
5		Percent torque at idle, point 1 SPN 551	0..125 = -125 % ..0 %	optional
			126..250 = not used	
			254 = Error indicator	
			255 = not available	
6..7		Maximum Retarder speed, point 2 SPN 548	0..64255 = 0..8031,875 rpm	optional
			65024..65279 = Error indicator	
			65280..65535 = not available	
8		Percent torque at maximum speed, point 2 SPN 552	0..125 = -125 % ..0 %	optional
			126..250 = not used	
			254 = Error indicator	
			255 = not available	
9..10		Retarder speed at point 3 SPN 549	0..64255 = 0..8031,875 rpm	optional
			65024..65279 = Error indicator	
			65280..65535 = not available	
11		Percent torque at point 3 SPN 553	0..125 = -125 % ..0 %	optional
			126..250 = not used	
			254 = Error indicator	
			255 = not available	
12..13		Retarder speed at point 4 SPN 550	0..64255 = 0..8031,875 rpm	optional
			65024..65279 = Error indicator	
			65280..65535 = not available	
14		Percent torque at point 4 SPN 554	0..125 = -125 % ..0 %	optional
			126..250 = not used	
			254 = Error indicator	
			255 = not available	
15..16		Retarder speed at peak torque, point 5 SPN 547	0..64255 = 0..8031,875 rpm	optional
			65024..65279 = Error indicator	
			65280..65535 = not available	
17..18		Reference Retarder torque SPN 556	0..64255 = 0..64255 Nm	Ref Torque
			65024..65279 = Error indicator	
			65280..65535 = not available	
19		Percent torque at	0..125 = -125 % ..0 %	optional

Byte	Bit	Bedeutung	Wertebereich	Bemerkung
		peak torque, point 5 SPN 555	126..250 = not used	optional
			254 = Error indicator	
			255 = not available	

1.1.1.34 RF: Retarder Fluids

PGN 65275
Transmission repetition rate: 1s
ID: 0x18FEFB10

Byte	Bit	Bedeutung	Wertebereich	Bemerkung
1		Hydraulic retarder pressure SPN 119	0..250 = 0..4000 kPa	wird immer 255 gesendet
			254 = Error indicator	
			255 = not available	
2		Hydraulic retarder oil temperature SPN 120	0..250 = -40..210 °C	supported
			254 = Error indicator	
			255 = not available	
3..8		Not defined		-

1.1.1.35 RQST: Request

ID	DLC [Byte]	Sendeart	Zykluszeit	Sender	PGN
0x18EAFF03	3	noMsgSendType	0	Transmission1	0xEA00

Name	Startbit	Länge [Bit]	Initwert	Faktor	Offset	Min	Max	SPN
ParameterGroupNumber	0	24	0	1	0	0	1,68E+12	0

With this message the TCU may request the following messages:
Hight Resolution Vehicle Distance VDHR: HIGH RESOLUTION VEHICLE DISTANCE
Time/Date TD: TIME/DATE)
Vehicle Weight VW: VEHICLE WEIGHT

1.1.1.36 RQST_RC_Eng Request: Engine Retarder Configuration

ID	DLC [Byte]	Sendeart	Zykluszeit	Sender	PGN
0x18EA0F03	3	noMsgSendType	0	Transmission1	0xEA00

Name	Startbit	Länge [Bit]	Initwert	Faktor	Offset	Min	Max	SPN
ParameterGroupNumber	0	24	0	1	0	0	1,68E+12	0

1.1.1.37 SOFT: Software Identification

ID	DLC [Byte]	Sendeart	Zykluszeit	Sender	Kommentar	PGN
0x18FEDA03	22	noMsgSendType	0	Transmission1	Software Identification	0xFEDA

Name	Start bit	Länge [Bit]	Iniwert	Faktor	Offset	Min	Max	Einheit	Kommentar	SPN
NmbrOfSftwreIdentificationFields	0	8	0	1	0	0	250	steps	Number of software identification designators represented in the software identification parameter group.	965
SoftwareIdentification	8	8	0	1	0	0	255	per byte	Software identification of an	234

									electronic module. As an example, this parameter may be represented with ASCII characters	

1.1.1.38 TC1_EL: Transmission Control1

PGN 256 **J1939**
ID: 0x0C010305 (Shift Console to Transmission)

Byte	Bit	Bedeutung	Wertebereich	verknüpfte Funktion
1..2		not relevant		-
3		Requested gear	0xF5 (i.e. value 245) D1	FS-Stellung Bezeichnung
			0xF4 (i.e. value 244) D2	
			0xF3 (i.e. value 243) D3	
			0xFC (i.e. value 252) D	
			0x7D (i.e. value 125) N	
			0xDF (i.e. value 223) R	
			0xE0 (i.e. value 224) no Button	
			0xFE (i.e. value 254) Error	
3..5		Not relevant		-
6	1..6	Transmission requested range (nicht nach Norm)	neutral (N)	Details siehe unten
			forward (D..D3)	
			reverse (R)	
	7,8	Life-Bit-Counter	cyclic from 00 to 11	
7..8		Not defined	-	-

Transmission requested range = driving direction with Ecolife-gearselector

	Byte	Bit-Nummer	direction	coding of the bit couples
	6	1,2	neutral (N)	00: direction not active
		3,4	forward (D..D3)	01: direction is active
		5,6	reverse (R)	10: error 11: undefined

1.1.1.39 TC1fromABS: Transmission Control1

PGN 256
ID: 0x0C01030B (ABS to Transmission)

Byte	Bit	Bedeutung	Wertebereich	verknüpfte Funktion
1	1..2	Gear shift inhibit request SPN 681	00 = Gear shifts are allowed	Kreuzschienenverteiler
			01 = Gear shifts are inhibited	
			10 = reserved	
			11 = Take no action	
	3..4	Torque converter lockup disable request SPN 682	00 = Allow torque converter lockup	Kreuzschienenverteiler
			01 = Disable torque converter lockup	
			10 = reserved	
			11 = Take no action	
	5..6	Disengage driveline request SPN 683	00 = Allow driveline engagement	Kreuzschienenverteiler
			01 = Disengage driveline	
			10 = reserved	
			11 = Take no action	
	7..8	Reverse Gear Shift Inhibit Request SPN 4242	00 = Allow shifts into Reverse gear	-

Byte	Bit	Bedeutung	Wertebereich	verknüpfte Funktion
			01 = Inhibit shifts into Reverse gear, and shift transmission to Neutral if already in Reverse or attempting to shift to Reverse	
			10 = reserved	
			11 = Take no action	
2		Requested percent clutch slip SPN 684	0..250 = 0..100 %	-
			254 = Error indicator	
			255 = not requested	
3		Requested gear SPN 525	0..250 = -125..125	-
			251 = park	
			254 = Error indicator	
			255 = not requested	
4	1..2	Disengage diff. lock, Front axle 1 SPN 685	00 = Engage differential lock	-
			01 = Disengage differential lock	
			10 = reserved	
			11 = Take no action	
	3..4	Disengage diff. lock, Front axle 2 SPN 686	00 = Engage differential lock	-
			01 = Disengage differential lock	
			10 = reserved	
			11 = Take no action	
	5..6	Disengage diff. lock, Rear axle 1 SPN 687	00 = Engage differential lock	-
			01 = Disengage differential lock	
			10 = reserved	
			11 = Take no action	
	7..8	Disengage diff. lock, Rear axle 2 SPN 688	00 = Engage differential lock	-
			01 = Disengage differential lock	
			10 = reserved	
			11 = Take no action	
5	1..2	Disengage diff. lock, Central SPN 689	00 = Engage differential lock	-
			01 = Disengage differential lock	
			10 = reserved	
			11 = Take no action	
	3..4	Disengage diff. lock, Central front SPN 690	00 = Engage differential lock	-
			01 = Disengage differential lock	
			10 = reserved	
			11 = Take no action	
	5..6	Disengage diff. lock, Central rear SPN 691	00 = Engage differential lock	-
			01 = Disengage differential lock	
			10 = reserved	
			11 = Take no action	
	7…8	Transmission load reduction inhibit request SPN 5762	00 = Allow or resume transmission load reduction functions 01 = Inhibit or abort transmission load reduction functions 10 = Reserved 11 = Don't care/take no action	-
6	1..2	Transm Mode 1 SPN 1852	00 = Mode not active	ED
			01 = Mode active	
			10 = error	
			11 =not available	
	3..4	Transm Mode 2 SPN 1853	00 = Mode not active	ED
			01 = Mode active	

Byte	Bit	Bedeutung	Wertebereich	verknüpfte Funktion
			10 = error	
			11 =not available	
	5..6	Transm Mode 3 SPN 1854	00 = Mode not active	ED
			01 = Mode active	
			10 = error	
			11 =not available	
	6..7	Transm Mode 4 SPN 1855	00 = Mode not active	ED
			01 = Mode active	
			10 = error	
			11 =not available	
7	1..2	Not defined		
	3..6	Transmission Requested Launch Gear SPN 4255	0..250 = -125..125	supported
			254 = Error indicator	
			255 = not available	
	7..8	Transmission Shift Selector Display Mode Switch SPN 2985	00 = Off	-
			01 = On	
			10 = error	
			11 =not available	
8	1..2	Transmission Mode 5 SPN 4246	00 = Mode not active	ED
			01 = Mode active	
			10 = error	
			11 =not available	
	3..4	Transmission Mode 6 SPN 4247	00 = Mode not active	ED
			01 = Mode active	
			10 = error	
			11 =not available	
	5..6	Transmission Mode 7 SPN 4248	00 = Mode not active	ED
			01 = Mode active	
			10 = error	
			11 =not available	
	7..8	Transmission Mode 8 SPN 4249	00 = Mode not active	ED
			01 = Mode active	
			10 = error	
			11 =not available	

1.1.1.40 TC1fromXX: Transmission Control1

PGN 256
ID: 0x0C010300 (Engine to Transmission)
0x0C010311 (Cruise Control to Transmission)
0xC010327 (Management Computer to Transmission)

Byte	Bit	Bedeutung	Wertebereich	verknüpfte Funktion
1	1..2	Gear shift inhibit request	00 = Gear shifts are allowed	Kreuzschienenverteiler
			01 = Gear shifts are inhibited	
			10 = reserved	
			11 = Take no action	
	3..4	Torque converter lockup disable request	00 = Allow torque converter lockup	Kreuzschienenverteiler
			01 = Disable torque converter lockup	
			10 = reserved	
			11 = Take no action	
	5..6	Disengage driveline request	00 = Allow driveline engagement	Kreuzschienenverteiler
			01 = Disengage driveline	

			10 = reserved	
			11 = Take no action	
	7..8	Reverse Gear Shift Inhibit Request SPN 4242	00 = Allow shifts into Reverse gear	-
			01 = Inhibit shifts into Reverse gear, and shift transmission to Neutral if already in Reverse or attempting to shift to Reverse	
			10 = reserved	
			11 = Take no action	
2		not relevant		-
3		Requested gear	0..124 = Reverse (R)	FS-Stellung Bezeichnung
			125 = Neutral (N)	
			126..250 = Forward (D)	
			251 = park	
			252 = ZF pivot turn	
			254 = Error indicator	
			255 = not requested	
3..5		Not relevant		-
6..7		Transmission requested range (nicht nach Norm)	" D"," N"," R","D1","D2","D3", ...	Fahrschalter-anforderung über CAN
8		Not defined	-	-

Transmission requested range

		Button	**Byte 6 (ASCII / HEX)**	**Byte 7 (ASCII / HEX)**
		N	" " / 0x20	"N" / 0x4E
		D	" " / 0x20	"D" / 0x44
		D1..8	"D" / 0x44	"1" .. “8" / 0x31 .. 0x38
		D0	"D" / 0x44	"0" / 0x30
		R	" " / 0x20	"R" / 0x52
		R1-R3	"R" / 0x52	"1" .. "4" / 0x31 .. 0x33
		turn	" " / 0x20	"W" / 0x57
		error	/ 0xFE	/ 0xFE
		not available or not requested	/ 0xFF	/ 0xFF
		Codierfehler	/ 0x00	/ 0x00

1.1.1.41 TC1: Transmission Control1 (TC1_from_SC auf CAN B)

PGN 256
ID: 0x0C010305 (Shift Console to Transmission)

Byte	**Bit**	**Bedeutung**	**Wertebereich**	**verknüpfte Funktion**
1..2		not relevant		-
3		Requested gear	0x00 = Reverse (R)	FS-Stellung Bezeichnung
			0x7D = Neutral (N)	
			FA = Forward (D)	
			sonst = Error	
3..5		Not relevant		-
6..7		Transmission requested range (nicht nach Norm)	" D"," N"," R","D1","D2","D3", ...	Fahrschalteranforderung über CAN
8		Not defined	-	-

Transmission requested range

Button	Byte 6 (ASCII / HEX)	Byte 7 (ASCII / HEX)
N	" " / 0x20	"N" / 0x4E
D	" " / 0x20	"D" / 0x44
D1..9	"D" / 0x44	"1" .. "9" / 0x31 .. 0x39
R	" " / 0x20	"R" / 0x52
R1-R3	"R" / 0x52	"1" .. "4" / 0x31 .. 0x33
Error	sonst	sonst

1.1.1.42 TCFG: Transmission Configuration

PGN 65250
Transmission repetition rate: On request
ID: 0x18FEE203

Byte	Bit	Bedeutung	Wertebereich	verknüpfte Parameter
1		Number of reverse gear ratios SPN 958	0..125 = 0..125	*RADS_D.Gg_zul_Radsatz*
			254 = Error indicator	
			255 = not available	
2		Number of forward gear ratios SPN 957	0..125 = 0..125	*RADS_D.Gg_zul_Radsatz*
			254 = Error indicator	
			255 = not available	
3..4		Highest reverse gear ratio --> Transmission Gear Ratio	0..64255 = 0..64,255	*RADS_D.i_SGetr_R*
			65024..65279 = Error indicator	
			65280..65535 = not available	
..		..	..	..
a..b		Lowest reverse gear ratio	0..64255 = 0..64,255	*RADS_D.i_SGetr_R*
			65024..65279 = Error indicator	
			65280..65535 = not available	
c..d		Lowest forward gear ratio	0..64255 = 0..64,255	*RADS_D.i_SGetr*
			65024..65279 = Error indicator	
			65280..65535 = not available	
..		..	..	..
e..f		Highest forward gear ratio	0..64255 = 0..64,255	*RADS_D.i_SGetr*
			65024..65279 = Error indicator	
			65280..65535 = not available	

Length of the message depends on gearbox configuration (no. of gears)

1.1.1.43 TCI: Transfer Case Information

PGN 64899 **J1939**
ID: 0x18FD83FE

Byte	Bit	Bedeutung	Wertebereich	verknüpfte Funktion
3		Transfer Case Status	000 2 Wheel - High	Internal Digital Signals are generated from this information - 4-Wheel drive active - TC High/Low
			001 4 Wheel - High	
			010 Neutral	
			011 2 Wheel - Low	
			100 4 Wheel - Low	
			101 TC Shift in Progess / not confirmed	
			110 Error	
			111 SNV	

1.1.1.44 TD: Time/Date

PGN 65254
Reception repetition rate: On request
ID: 0x18FEE6EE

Byte	Bedeutung	Wertebereich	Auflösung	Bemerkung
1	Seconds SPN 1603	0..59,75 s	0.25 s/bit	Bei ungültigem
				CAN-Signal: 0x58
2	Minutes SPN 1604	0..59 min	1 min /bit	Bei ungültigem
				CAN-Signal: : 0x16
3	Hours SPN 1605	0..23 h	1 hour /bit	Bei ungültigem
				CAN-Signal: 0x16
4	Month SPN 1606	1..12 month	1 month/bit	Bei ungültigem
				CAN-Signal: : 0x02
5	Day SPN 1607	0.25 .. 31.75 day	0.25 day/bit	Bei ungültigem
				CAN-Signal: 0x08
6	Year SPN 1608	1985..2235 year	1 year/bit	Offset + 1985, bei ungültigem
				CAN-Signal: 0xED
7	Local Minute Offset SPN 1609			wird nicht weiter verwendet
8	Local Hour Offset SPN 1610			wird nicht weiter verwendet

Optional for timestamps on errors

1.1.1.45 TRF1: Transmission Fluids 1

PGN 65272
Transmission repetition rate: when active; 1s
ID: 0x18FEF803

Byte	Bit	Bedeutung	Wertebereich	Bemerkung
1		Clutch Pressure SPN 123	0..250 = 0..+4000kPa	-
			254 = Error indicator	
			255 = not available	
2		Transmission Oil Level SPN 124	0..250 = 0..100%	Oil level from Sensor (when available)
			254 = Error indicator	
			255 = not available	
3		Transmission Filter Differential Pressure SPN 126	0..250 = 0..500 kPa	- -
			254 = Error indicator	
			255 = not available	
4		Transmission Oil Pressure SPN 127	0..250 = 0..4000 kPa	
			254 = Error indicator	
			255 = not available	
5..6		Transmission Oil Temperature SPN 177	0..64255 = -273..1735 (0,03125GradC/Bit; -273 GradC Offset))	T Sump

Byte	Bit	Bedeutung	Wertebereich	Bemerkung
			65024..65279 = Error indicator	
			65280..65535 = not available	
7		Transmission Oil Level High / Low SPN 3027	0..250 = -62,5..62,5 l	Oil level from Sensor (when available)
			254 = Error indicator	
			255 = not available	
8	1..4	Transmission Oil Level Countdown Timer SPN 3028	0000 = less than 1 minute	-
			0001 = One minute	
			0010 = Two minutes	
			0011 = Three minutes	
			0100 = Four minutes	
			0101 = Five minutes	
			0110 = Six minutes	
			0111 = Seven minutes	
			1000 = Eight minutes	
			1001 = Nine minutes	
			1010 = Ten minutes	
			1011 = Eleven minutes	
			1100 = Twelve minutes	
			1101 = Thirtenn minutes	
			1110 = Error	
			1111 = Not available	
	5..8	Transmission Oil Level Measurement Status SPN 3026	0000 = Conditions valid for transmission oil level measurement	Conditions for measurement
			0001 = Conditions not valid – Settling timer still counting down	
			0010 = Conditions not valid – Transmission in gear	
			0011 = Conditions not valid – Transmission fluid temperature too low	
			0100 = Conditions not valid – Transmission fluid temperature too high	
			0101 = Conditions not valid – Vehicle moving; output shaft speed too high	
			0110 = Conditions not valid – Vehicle not level	
			0111 = Conditions not valid – Engine speed too low	
			1000 = Conditions not valid – Engine speed too high	
			1001 = Conditions not valid – No request for reading	
			1010 = Not defined	
			1011 = Not defined	
			1100 = Not defined	
			1101 = Conditions not valid - Other	
			1110 = Error	
			1111 = Not available	

1.1.1.46 TRF2: Transmission Fluids 2

ID	DLC [Byte]	Sendeart	Zykluszeit	Sender	PGN
0x18FD9503	8	cyclic	1000	Transmission 1	0xFD95

Name	Startbit	Länge [Bit]	Initialwert	Faktor	Offset	Min	Max	SPN
TransOverheatIndicator	4	2	0	1	0	0	3	5345

1.1.1.47 TSC1fromTCU2Eng: Torque/Speed Control1

PGN 0
Transmission repetition rate: when active; 10 ms to the engine
ID: 0x0C000003 (Transmission to Engine)

Byte	Bit	Bedeutung	Wertebereich	Bemerkung
1	1..2	Override control modes SPN 695	00 = Override disabled	Normalfall
			01 = Speed control	-
			10 = Torque control	nicht unterstützt
			11 = Speed / torque limit control	je nach Bedarf
	3..4	Requested speed control conditions SPN 696	00 = Transient Optimized for driveline disengaged and non-lockup conditions	11 im Normalfall
			01 = Stability Optimized for driveline disengaged and non-lockup conditions	
			10 = Stability Optimized for driveline engaged and/or in lockup condition 1	
			11 = Stability Optimized for driveline engaged and/or in lockup condition 2	
	5..6	Override control mode priority SPN 897	00 = Highest priority	immer 10
			01 = High priority	
			10 = Medium priority	
			11 = Low priority	
	7..8	Not defined		-
2..3		Requested speed / Speed limit SPN 898	0..64255 = 0..8031,875 rpm	je nach Bedarf
			65024..65279 = Error indicator	
			65280..65535 = not available	
4		Requested torque / Torque limit SPN 518	0..125 = -125..0 % for retarder torque requests	-
			125..250 = 0..125 % for engine torque requests	
			254 = Error indicator	
			255 = not available	
5	1..3	TSC1 Transmission Rate SPN 3349	000 = 1000 ms transmission rate	-
			001 = 750 ms transmission rate	
			010 = 500 ms transmission rate	
			011 = 250 ms transmission rate	
			100 = 100 ms transmission rate	
			101 = 50 ms transmission rate	
			110 = 20 ms transmission rate	
			111 = Use standard TSC1 transmission rates of 10 ms to engine	
	4..8	TSC1 Control Purpose SPN 3350	00000 = P1 = Accelerator Pedal/Operator Selection	-
			00001 = P2 = Cruise Control	

			00010 = P3 = PTO Governor	
			00011 = P4 = Road Speed Governor	
			00100 = P5 = Engine Protection	
			00101 - 11110 = P6-P31 = Reserved for SAE Assignment	
			11111 = P32 = Temporary Power Train Control (Original use of TSC1 Command)	
6	1..4	Engine Requested Torque - High resolution SPN 4191	0000 = +0,000%	-
			0001 =+0,125%	
			0010 = +0,250%	
			0011 = +0,375%	
			0100 = +0,500%	
			0101 = +0,625%	
			0110 = +0,750%	
			0111 = +0,875%	
			1000 - 1111 = not available	
	5..8	Not defined		-
7		Not defined		-
8	1..4	Message Counter SPN 4206	0 .. 15	-
	5..8	Message Checksum SPN 4207	0 ..15	-

1.1.1.48 TSC1fromTCU2EngRET: Torque/Speed Control1

PGN 0
ID: 0x0C000F03 oder 0x0C002903

Byte	Bit	Bedeutung	Wertebereich	Bemerkung
1	1..2	Override control modes SPN 695	00 = Override disabled	je nach Bedarf *J1939_D.TSC1_TO_ENGRET_OCM_aktiv*
			01 = Speed control	
			10 = Torque control	
			11 = Speed / torque limit control	
	3..4	Requested speed control conditions SPN 696	00 = Transient Optimized for driveline disengaged and non-lockup conditions	wird immer 11 gesendet
			01 = Stability Optimized for driveline disengaged and non-lockup conditions	
			10 = Stability Optimized for driveline engaged and/or in lockup condition 1	
			11 = Stability Optimized for driveline engaged and/or in lockup condition 2	
	5..6	Override control mode priority SPN 897	00 = Highest priority	Je nach Applikation *J1939_D.TSC1_TO_ENGRET_OCM_Prio*
			01 = High priority	
			10 = Medium priority	
			11 = Low priority	
	7..8	Not defined		-
2..3		Requested speed / Speed limit SPN 898	0..64255 = 0..8031,875 rpm	wird immer 65280 gesendet
			65024..65279 = Error indicator	
			65280..65535 = not available	
4		Requested torque / Torque limit SPN 518	0..125 = -125..0 % for retarder torque requests	-
			125..250 = 0..125 % for engine torque requests	
			254 = Error indicator	

			255 = not available	
5	1..3	TSC1 Transmission Rate SPN 3349	000 = 1000 ms transmission rate	-
			001 = 750 ms transmission rate	
			010 = 500 ms transmission rate	
			011 = 250 ms transmission rate	
			100 = 100 ms transmission rate	
			101 = 50 ms transmission rate	
			110 = 20 ms transmission rate	
			111 = Use standard TSC1 transmission rates of 10 ms to engine	
	4..8	TSC1 Control Purpose SPN 3350	00000 = P1 = Accelerator Pedal/Operator Selection	-
			00001 = P2 = Cruise Control	
			00010 = P3 = PTO Governor	
			00011 = P4 = Road Speed Governor	
			00100 = P5 = Engine Protection	
			00101 - 11110 = P6-P31 = Reserved for SAE Assignment	
			11111 = P32 = Temporary Power Train Control (Original use of TSC1 Command)	
6	1..4	Engine Requested Torque - High resolution SPN 4191	0000 = +0,000%	-
			0001 =+0,125%	
			0010 = +0,250%	
			0011 = +0,375%	
			0100 = +0,500%	
			0101 = +0,625%	
			0110 = +0,750%	
			0111 = +0,875%	
			1000 - 1111 = not available	
	5..8	Not defined		-
7		Not defined		-
8	1..4	Message Counter SPN 4206	0 .. 15	-
	5..8	Message Checksum SPN 4207	0 ..15	-

1.1.1.49 TSC1fromXY2DrvRET: Torque/Speed Control1 (to Driveline Retarder):

PGN 0

Die TCU kann 3 TSC1 to Driveline Retarder empfangen

ID: 0x0C001011 (TSC1fromCC2DrvRET)
0x0C00100B (TSC1fromABS2DrvRET)
0x0C0010XX (TSC1fromXY2DrvRET)

Byte	**Bit**	**Bedeutung**	**Wertebereich**	**verknüpfte Funktion**
1	1..2	Override control modes SPN 695	00 = Override disabled	ausgeschaltet
			01 = Speed control	-
			10 = Torque control	Anforderung
			11 = Speed / torque limit control	Limitierung
	3..4	Requested speed control conditions SPN 696	00 = Transient Optimized for driveline disengaged and non-lockup conditions	-
			01 = Stability Optimized for driveline disengaged and non-lockup conditions	
			10 = Stability Optimized for driveline engaged and/or in lockup condition 1	
			11 = Stability Optimized for driveline engaged and/or in lockup condition 2	
	5..6	Override control mode	00 = Highest priority	Eventuell Max-

		priority SPN 897	01 = High priority	Auswertung bei meheren TSC1
			10 = Medium priority	
			11 = Low priority	
	7..8	Not defined		-
2..3		Requested speed / Speed limit SPN 898	0..64255 = 0..8031,875 rpm	-
			65024..65279 = Error indicator	
			65280..65535 = not available	
4		Requested torque / Torque limit SPN 518	0..125 = -125..0 % for retarder torque requests	Retarderanforderung / Limitierung
			125..250 = 0..125 % for engine torque requests	
			254 = Error indicator	
			255 = not available	
5	1..3	TSC1 Transmission Rate SPN 3349	000 = 1000 ms transmission rate	-
			001 = 750 ms transmission rate	
			010 = 500 ms transmission rate	
			011 = 250 ms transmission rate	
			100 = 100 ms transmission rate	
			101 = 50 ms transmission rate	
			110 = 20 ms transmission rate	
			111 = Use standard TSC1 transmission rates of 10 ms to engine	
	4..8	TSC1 Control Purpose SPN 3350	00000 = P1 = Accelerator Pedal/Operator Selection	-
			00001 = P2 = Cruise Control	
			00010 = P3 = PTO Governor	
			00011 = P4 = Road Speed Governor	
			00100 = P5 = Engine Protection	
			00101 - 11110 = P6-P31 = Reserved for SAE Assignment	
			11111 = P32 = Temporary Power Train Control (Original use of TSC1 Command)	
6	1..4	Engine Requested Torque - High resolution SPN 4191	0000 = +0,000%	-
			0001 =+0,125%	
			0010 = +0,250%	
			0011 = +0,375%	
			0100 = +0,500%	
			0101 = +0,625%	
			0110 = +0,750%	
			0111 = +0,875%	
			1000 - 1111 = not available	
	5..8	Not defined		-
7		Not defined		-
8	1..4	Message Counter SPN 4206	0 .. 15	-
	5..8	Message Checksum SPN 4207	0 ..15	-

1.1.1.50 VDC1:
PGN 65103
Transmission repetition rate: 100ms
ID: 0x18FE4F0B

Byte	Bit	Reference	Bedeutung	Wertebereich	verknüpfte Funktion
1	1..2	SPN	VDC Information	00 = off	
		1813		01 = on	-

Byte	Bit	Reference	Bedeutung	Wertebereich	verknüpfte Funktion
			Signal	10 = reserved	
				11 = don't care / take no action	
	3..4	SPN	VDC fully operational	00 = VDC not fully operational	Kreuzschienenverteiler
		1814		01 = VDC fully operational	_
				10 = reserved	_
				11 = don't care / take no action	_
	5..6	SPN	VDC brake light request	00 = turn brake light not on	-
		1815		01 = turn brake light on	
				10 = reserved	
				11 = don't care / take no action	
	7..8		Not defined		
2	1..2	SPN	ROP Engine control active	00 = ROP engine control passive but installed	Kreuzschienenverteiler
		1816		01 = ROP engine control active	_
				10 = reserved	_
				11 = don't care / take no action	_
	3..4	SPN	ROP Brake control active	00 = ROP brake control passive but installed	Kreuzschienenverteiler
		1818		01 = ROP brake control active	_
				10 = reserved	_
				11 = don't care / take no action	_
	5..6	SPN	YC Engine control active	00 = YC engine control passive but installed	Kreuzschienenverteiler
		1817		01 = YC engine control active	_
				10 = reserved	_
				11 = don't care / take no action	_
	7..8	SPN	YC Brake control active	00 = YC brake control passive but installed	Kreuzschienenverteiler
		1819		01 = YC brake control active	_
				10 = reserved	_
				11 = don't care / take no action	_
3..8			Not defined		-

1.1.1.51 VDHR: High Resolution Vehicle Distance

PGN 65217
Reception repetition rate: 1 s
ID: 0x18FEC1EE

Byte	Bedeutung	Wertebereich	Auflösung	Bemerkung
1..4	High resolution total vehicle distance SPN 917	0..21 055 406 km	5 m/bit	For ambient data on errors
5..8	High resolution trip distance SPN 918	0..21 055 406 km	5 m /bit	-

1.1.1.52 VW: Vehicle Weight

ID	DLC [Byte]	Sendeart	Zykluszeit	Sender	PGN
0x18FEEA0B	8	noMsgSendType	0	BrakesSystemController	0xFEEA

Name	Multiplexen/Gruppe	Startbit	Länge [Bit]	Iniwert	Faktor	Offset	Min	Max	Einheit	SPN
AxleLocation	Multiplexor	0	8	0	1	0	0	255		928
AxleWeight_00	AxleLocation = 0x0 (Axle0_Position0)	8	16	0	0.5	0	0	32127.5	kg	522000
AxleWeight_10	AxleLocation = 0x10 (Axle1_Position0)	8	16	0	0.5	0	0	32127.5	kg	522010
AxleWeight_20	AxleLocation = 0x20 (Axle2_Position0)	8	16	0	0.5	0	0	32127.5	kg	522020
AxleWeight_30	AxleLocation = 0x30 (Axle3_Position0)	8	16	0	0.5	0	0	32127.5	kg	522030
TrailerWeight_00	AxleLocation = 0x0 (Axle0_Position0)	24	16	0	2	0	0	128510	kg	522100
TrailerWeight_10	AxleLocation = 0x10 (Axle1_Position0)	24	16	0	2	0	0	128510	kg	522110
TrailerWeight_20	AxleLocation = 0x20 (Axle2_Position0)	24	16	0	2	0	0	128510	kg	522120
TrailerWeight_30	AxleLocation = 0x30 (Axle3_Position0)	24	16	0	2	0	0	128510	kg	522130
CargoWeight_00	AxleLocation = 0x0 (Axle0_Position0)	40	16	0	2	0	0	128510	kg	522200
CargoWeight_10	AxleLocation = 0x10 (Axle1_Position0)	40	16	0	2	0	0	128510	kg	522210
CargoWeight_20	AxleLocation = 0x20 (Axle2_Position0)	40	16	0	2	0	0	128510	kg	522220
CargoWeight_30	AxleLocation = 0x30 (Axle3_Position0)	40	16	0	2	0	0	128510	kg	522230