



## EXTERNAL CAN COMMUNICATION SPECIFICATION

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## 1 Introduction

This is the communication protocol for the “ExternalECU-BCI” in SOP1804.

## 2 Communication specification

Protocol used:

SAE J1939, ISO 11898 on network "ExtBodywork".

### **Data length code and unspecified bits in the PGN data field**

All transmitted CAN messages shall have the data length code (DLC) set to 8 bytes, unless other specified.

This CAN specification only lists the data field bits and bytes that have parameter assignments. Any bits of the PGN data field that are not assigned to a parameter are not shown, but shall be accounted for as unspecified. All unspecified bits within the transmitted message data length must be filled with a value of one (1). The unspecified bits are available for assignment to parameters at some future time.

### **CAN message priority bits**

The three CAN message priority bits are used to optimize message latency for transmission onto the bus only. They should be globally masked off by the receiver (ignored). The priority of any received message can be from highest, 0 (000<sub>2</sub>), to lowest, 7 (111<sub>2</sub>). The priority used for transmit messages should at all times be as specified in this document.

For signals which have ranges for the parameter value Error, this range is represented with the first valid value in the range (i.e. for a 2 byte signal the Error range 0xFE<sub>xx</sub> (65024 – 65279) the Error value would be 0xFE00). This corresponds to current implementation practices.

For signals which have ranges for the parameter value Not Available/Not Requested, this is represented with the last valid value in the range (i.e. for a 2 byte signal the Not Available range 0xFF<sub>xx</sub> (65280 – 65535) the Not Available value would be 0xFFFF). This thus corresponds to a not implemented signal.

If not specified the ranges starting at 2 byte values FB00 and FC00 and corresponding, are assumed not to be used and ranges to follow J1939 standard definitions



## 2.1 Name extensions

Extensions for messages sent to/from more than one device:

Extension	From	To
A	0x0B (Brake)	
AB	0x64 (Air Bag)	
AL	0x1D (Locking and Alarm System)	
APS	0x30 (Air Processing System)	
ATA	0x44 (Air to Air Heater)	
AWD	0x04 (Differential Lock Controller)	
BCI	0xE6 (Bodywork Communication Interface)	
CV	0x43 (Converter Controller)	
E	0x00 (Engine)	
E -> FF	0x00 (Engine)	0xFF (Global)
F	0x2F (Suspension Management)	
HMS	0xEF (Hybrid Management System)	
ICL	0x17 (Instrument Cluster)	
ICL -> FF	0x17 (Instrument Cluster)	0xFF (Global)
K	0x27 (Coordinator)	
L	0x1B (Articulation Control)	
RD	0x10 (Retarder)	
SC -> FF	0x05 (Shift Selector Module)	0xFF (Global)
SX	0x40 (Suspension Management System Auxiliary)	
T	0x03 (Gearbox)	
TCO	0xEE (Tachograph)	
TM	0x33 (Tire Pressure Monitoring)	
Unknown	0xFE (Unknown port)	
V	0x1E (Visibility System)	
WTA	0x45 (Water to Air Heater)	

## 2.2 Message summary

Message	Send	Receive
<b>Messages on network "ExtBodywork"</b>		
<b>Sent messages: PDU2, Source Address; 0xFE / Unknown port / Unknown</b>		
BodyworkAirSuspensionControl(Bodywork Air Suspension Control) - Unknown	0CFF2EFE	
BodyworkAuxInfo(Bodywork Auxiliary Information) - Unknown	18FF9BFE	
BodyworkDriverInformation1(Bodywork Driver Information 1) - Unknown	18FF2DFE	
BodyworkDriverInformation2(Bodywork Driver Information 2) - Unknown	18FF5CFE	
BodyworkEngineLimitation(Bodywork Engine Limitation) - Unknown	0CFF2BFE	
BodyworkEngineRequest1(Bodywork Engine Request 1) - Unknown	18FF5BFE	
BodyworkEngineRequest2(Bodywork Engine Request 2) - Unknown	18FF5AFE	
BodyworkPTOControl(Bodywork PTO Control) - Unknown	0CFF2CFE	
BodyworkVehicleControl(Bodywork Vehicle Control) - Unknown	0CFF2AFE	
BodyworkVisibilityControl(Bodywork Visibility Control) - Unknown	0CFF2FFE	
DoorControl1(Door Control 1) - Unknown	18FE4EFE	
DoorControl2(Door Control 2) - Unknown	18FDA5FE	
DoorRampControl(Door Ramp Control) - Unknown	18FD70FE	
PowerManagementControl(PowerManagementControl) - Unknown	18FF15FE	
<b>Received messages: PDU1, Destination Address; 0xFF / Global / FF</b>		
ASC2(Air Suspension Control 2) - K -> FF		0CD2FF27
Illumination(Cab Illumination Message) - ICL -> FF		18D0FF17
TC1(Transmission Control 1) - SC -> FF		0C01FF05
TP_CM(Transport Protocol - Connection Mgmt) - E -> FF		18ECFF00
TP_DT(Transport Protocol - Data Transfer) - E -> FF		18EBFF00
<b>Received messages: PDU2</b>		
AIR1(Air Supply Pressure) - APS		18FEAE30
AlarmStatusProprietary(AlarmStatusProprietary) - AL		18FFB41D
AmbientConditions(Ambient Conditions) - BCI		18FEF5E6
AmbientConditions(Ambient Conditions) - K		18FEF527
ASC1(Air Suspension Control 1) - F		0CFE5A2F
ASC1(Air Suspension Control 1) - SX		0CFE5A40
ASC3(Air Suspension Control 3) - F		18FE592F
ASC3(Air Suspension Control 3) - SX		18FE5940
CabInformationProprietary1(Cab Information Proprietary 1) - ICL		18FF9617
CooGeneralInfo(CooGeneralInfo) - K		0CFFB027
CooGeneralInfo2(CooGeneralInfo2) - K		0CFFAF27

Message	Send	Receive
CrashOccured(CrashOccured) - AB		18FFFD64
CruiseControlVehSpeed(Cruise Control/Vehicle Speed) - E		18FEF100
CUVInformation(CUVInformation) - V		18FFB11E
DashDisplay(Dash Display) - K		18FEFC27
DLN2(DLN2) - E		0CFF8100
DLN5(DLN5) - K		0CFFA027
DLN8(DLN8) - E		18FF8800
DM1(Diagnostic Message 1) - A		18FECA0B
DM1(Diagnostic Message 1) - AB		18FECA64
DM1(Diagnostic Message 1) - APS		18FECA30
DM1(Diagnostic Message 1) - ATA		18FECA44
DM1(Diagnostic Message 1) - AWD		18FECA04
DM1(Diagnostic Message 1) - CV		18FECA43
DM1(Diagnostic Message 1) - E		18FECA00
DM1(Diagnostic Message 1) - F		18FECA2F
DM1(Diagnostic Message 1) - HMS		18FECAEF
DM1(Diagnostic Message 1) - K		18FECA27
DM1(Diagnostic Message 1) - L		18FECA1B
DM1(Diagnostic Message 1) - RD		18FECA10
DM1(Diagnostic Message 1) - T		18FECA03
DM1(Diagnostic Message 1) - TM		18FECA33
DM1(Diagnostic Message 1) - WTA		18FECA45
EAC1(Electronic Axle Controller 1) - K		18F00627
EBC1(Electronic Brake Controller 1) - A		18F0010B
EBC2(Wheel Speed Information) - K		18FEBF27
EBC4(Wheel Brake Lining Remaining Information) - A		1CFEAC0B
EBC5(Electronic Brake Controller 5) - A		18FDC40B
EEC1(Electronic Engine Controller 1) - E		0CF00400
EEC2(Electronic Engine Controller 2) - E		0CF00300
EngineConfig(Engine Configuration) - E		18ECFF00 18EBFF00 (FEE3)
EngineFluidLevPres(Engine Fluid Level/Pressure 1) - K		18FEEF27
EngineHoursRevolutions(Engine Hours, Revolutions) - E		18FEE500
EngineTemp(Engine Temperature 1) - E		18FEEE00
ERC1(Electronic Retarder Controller 1) - RD		18F00010
ETC1(Electronic Transmission Controller 1) - CV		0CF00243
ETC1(Electronic Transmission Controller 1) - T		0CF00203
ETC2(Electronic Transmission Controller 2) - T		18F00503
ETC7(Electronic Transmission Controller 7) - T		18FE4A03
FuelConsumption(Fuel Consumption (Liquid)) - E		18FEE900
FuelEconomy(Fuel Economy (Liquid)) - E		18FEF200
GPM1(General Purpose Message 1) - BCI		18FF60E6
HiResVehicleDist(High Resolution Vehicle Distance) - TCO		18FEC1EE
ICLInformationProprietary(ICLInformationProprietary) - ICL		18FFD517
InletExhaustCond(Inlet/Exhaust Conditions 1) - E		18FEF600
PTOInformationProp(PTO Information Proprietary) - BCI		18FF90E6

Message	Send	Receive
RetarderFluids(Retarder fluids) - RD		18FEFB10
ScaniaVehicleStatusMessage1(Scania Vehicle Status Message 1) - BCI		18FF27E6
ScaniaVehicleStatusMessage2(Scania Vehicle Status Message 2) - BCI		18FF28E6
ScaniaVehicleStatusMessage3(Scania Vehicle Status Message 3) - BCI		18FF26E6
SOFT(Software Identification) - BCI		18FEDAE6
TCO1(Tachograph) - TCO		0CFE6CEE
TimeDate(Time/Date) - ICL		18FEE617
TireConditionProprietary(Tire Condition Proprietary) - TM		18FF0333
TransmissionFluids(Transmission Fluids) - T		18FEF803
TransmissionProprietary2(Transmission Proprietary 2) - AWD		18FFA104
TransmissionProprietary2(Transmission Proprietary 2) - T		18FFA103
VehicleWeight(Vehicle Weight) - F		18FEEA2F
VehicleWeight(Vehicle Weight) - ICL		18FEEA17

## **2.3 Denominations**

- Tmin - Minimum period between two messages [ms]
- Tmax - Maximum period between two messages [ms]
- Byte - Parameter starts from this byte.
- Bit - Parameter starts from this bit (byte = 1-8) in the given byte.
- Length - Length of the parameter in bits.



### 2.4 Network: ExtBodywork

#### 2.4.1 Sent messages: PDU2, Source Address; 0xFE / Unknown port / Unknown

##### 2.4.1.1 BodyworkAirSuspensionControl (Bodywork Air Suspension Control) - Unknown

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/proprietary
0CFF2EFE	100	100	00FF2E	3	Cyclic	0	0	2E	FE		Prop



## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
X		1	1	4	<b>MessageConfigurationVersion (Message Configuration Version)</b>		1	0	0 - 0		
X		1	5	2	<b>ProhibitAutomAirSuspensionCntr (Prohibit Automatic Air Suspension Control)</b>		1	0	0 - 3		
X					No request	0x00					
X					Request prohibit automatic air suspension control	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		1	7	2	<b>ActivateKneelingWithDoorSwitch (Activate Kneeling With Door Switch)</b>		1	0	0 - 3		
X					KneelingWithDoorSwitchNotRequested	0x00					
X					KneelingWithDoorSwitchRequested	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		2	1	2	<b>InhibitManualLevelChange (Inhibit Manual Level Change)</b>		1	0	0 - 3		
X					InhibitNotRequested	0x00					
X					InhibitRequested	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		2	3	2	<b>InhibitKneelingOnly (Inhibit Kneeling Only)</b>		1	0	0 - 3		
X					InhibitKneelingNotRequested	0x00					
X					InhibitKneelingRequested	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		2	5	2	<b>InhibitBothKneelingAndNormLvl (Inhibit Both Kneeling And Norm Lvl)</b>		1	0	0 - 0		
X					InhibitKneelingAndLevelReturnNotRequeste d	0x00					
X					InhibitKneelingAndLevelReturnRequested	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		2	7	2	<b>SidewalkDetection (Sidewalk Detection)</b>		1	0	0 - 3		
X					SidewalkDetectionNotActive	0x00					
X					SidewalkDetectionActive	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		3	1	2	<b>ReturnToNormalLevel (Return To Normal Level)</b>		1	0	0 - 3		
X					ReturnToNormalLevelNotRequested	0x00					
X					ReturnToNormalLevelRequested	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
		3	3	4	<b>MemLevelRequest (Memory Level Request)</b>		1.0	0.0	0 - 13		
					NoMemoryLevelRequest	0x00					
					MemoryLevel1Request	0x01					
					MemoryLevel2Request	0x02					
					MemoryLevel3Request	0x03					



					MemoryLevel4Request	0x04					
					Reserved	0x0E					
					TakeNoAction	0x0F					
		3	7	2	<b>ExhaustBellowsRequest (Exhaust Bellows Request)</b>		1.0	0.0	0 - 3		
					NotRequested	0x00					
					Requested	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		4	1	2	<b>AlternativeLevelRequest (Alternative Level Request)</b>		1.0	0.0	0 - 3		
					NotRequested	0x00					
					Requested	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		4	3	2	<b>StopLevelChangeRequest (Stop Level Change Request)</b>		1.0	0.0	0 - 3		
					NotRequested	0x00					
					Requested	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
X		4	5	2	<b>ActivateKneelingWithBodybuilderSwitch (Activate Kneeling With Bodybuilder Switch)</b>		1.0	0.0	0 - 3		
X					KneelingWithBodybuilderSwitchtNotRequested	0x00					
X					KneelingWithBodybuilderSwitchtRequested	0x01					
X					Error	0x02					
X					NotAvailible	0x03					



## 2.4.1.2 BodyworkAuxInfo (Bodywork Auxiliary Information) - Unknown

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/proprietary
18FF9BFE	100	100	00FF9B	6	Cyclic	0	0	9B	FE		Prop

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
X		1	1	16	<b>AuxPage_n_SensorValue1 (Page n Sensor Value 1)</b>		1	0	0 - 64255		
X					Error	0xFE00					
X					NotAvailable	0xFF00					
X		3	1	16	<b>AuxPage_n_SensorValue2 (Auxiliary Page n Sensor Value 2)</b>		1	0	0 - 64255		
X					Error	0xFE00					
X					NotAvailable	0xFF00					
X		5	1	16	<b>AuxPage_n_ReferenceValue_1_or_2 (Auxiliary Page n Reference Value 1 or 2)</b>		1	0	0 - 64255		
X					Error	0xFE00					
X					NotAvailable	0xFF00					
X		7	1	8	<b>AuxPage_n (Auxiliary Page n)</b>		1	0	0 - 250		
X					No page	0x00					
X					Page 1	0x01					
X					Page 2	0x02					
X					Page 3	0x03					
X					Page 4	0x04					
X					Page 5	0x05					
X					Page 6	0x06					
X					Page 7	0x07					
X					Page 8	0x08					
X					Page 9	0x09					
X					Error	0xFE					
X					NotAvailable	0xFF					
X		8	1	2	<b>Aux_ReferenceValueState (Reference Value State)</b>		1	0	0 - 3		
X					No Reference Value Number	0x00					
X					Reference Value Number 1	0x01					
X					Reference Value Number 2	0x02					
X					TakeNoAction	0x03					
X		8	5	4	<b>MessageConfigurationVersion (Message Configuration Version)</b>		1	0	0 - 0		

**2.4.1.3 BodyworkDriverInformation1 (Bodywork Driver Information 1) - Unknown**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18FF2DFE	100	100	00FF2D	6	Cyclic	0	0	2D	FE		Prop

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
X		1	1	4	<b>MessageConfigurationVersion (Message Configuration Version)</b>		1	0	0 - 0		
X		1	5	2	<b>LuggageCompartmentAlarm (Luggage Compartment Alarm)</b>		1	0	0 - 0		
X					Disabled	0x00					
X					Enabled	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		1	7	2	<b>DriverAreaSensorStatus (Driver Area Sensor Status)</b>		1	0	0 - 3		
X					Active	0x00					
X					NotActive	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		2	1	2	<b>EngineFireAlarm (Engine Fire Alarm)</b>		1	0	0 - 0		1)
X					Disabled	0x00					
X					Enabled	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		2	3	2	<b>DriverGateSignal (Driver gate status signal)</b>		1.0	0	0 - 0		
X					DriverGateClosed	0x00					
X					DriverGateOpen	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		2	5	2	<b>PassengerAreaFireAlarm (Passenger Area Fire Alarm)</b>		1	0	0 - 0		
X					Disabled	0x00					
X					Enabled	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		2	7	2	<b>ToiletAlarm (Toilet Alarm)</b>		1	0	0 - 0		
X					NotActive	0x00					
X					Active	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		3	1	2	<b>HatchOpen (Hatch Open)</b>		1	0	0 - 3		
X					HatchNotOpen	0x00					
X					HatchOpen	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		3	3	2	<b>EmergencyExitSignal (Emergency exit door status signal)</b>		1.0	0	0 - 0		
X					EmergencyExitClosed	0x00					
X					EmergencyExitOpen	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		3	5	2	<b>StopSignalSound (Stop Signal Sound)</b>		1	0	0 - 3		

X					Disabled	0x00					
X					Enabled	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
		4	1	2	<b>VisuallyImpairedSignalVisual (VisuallyImpairedSignalVisual)</b>		1.0	0.0	0 - 3		
					Disabled	0x00					
					Enabled	0x01					
					Error	0x02					
					NotAvailable	0x03					
X		4	3	2	<b>WheelchairSignalSound (Wheelchair Signal Sound)</b>		1	0	0 - 3		
X					Disabled	0x00					
X					Enabled	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		4	5	2	<b>DoorOpenWhileDriving (Door Open While Driving)</b>		1	0	0 - 0		
X					NotActive	0x00					
X					Active	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		4	7	2	<b>PramSignalVisual (Pram Signal Visual)</b>		1	0	0 - 3		
X					Disabled	0x00					
X					Enabled	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		5	1	2	<b>PramSignalSound (Pram Signal Sound)</b>		1	0	0 - 3		
X					Disabled	0x00					
X					Enabled	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		5	3	2	<b>LowAirPressureInDoor (Low Air Pressure In Door)</b>		1	0	0 - 0		
X					NotActive	0x00					
X					Active	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		5	5	2	<b>SensingStripInDoorTriggered (Sensing Strip In Door Triggered)</b>		1	0	0 - 0		
X					NotActive	0x00					
X					Active	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		5	7	2	<b>DoorMalfunction (Door Malfunction)</b>		1	0	0 - 0		
X					NotActive	0x00					
X					Active	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		6	1	3	<b>WheelchairSignalVisual (Wheelchair Signal Visual)</b>		1	0	0 - 7		
X					Not Active	0x00					
X					Lamp Active	0x01					
X					Display Active	0x02					
X					Lamp and Display Active	0x03					
X					Error	0x06					
X					NotAvailable	0x07					



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X		6	4	3	<b>StopSignalVisual (Stop Signal Visual)</b>		1	0	0 - 7		
X					Not Active	0x00					
X					Lamp Active	0x01					
X					Display Active	0x02					
X					Lamp and Display Active	0x03					
X					Error	0x06					
X					NotAvailable	0x07					
		6	7	2	<b>DriversBerthAlarm (DriversBerthAlarm)</b>		1.0	0.0	0 - 3		
					NotActive	0x00					
					Active	0x01					
					Error	0x02					
					NotAvailable	0x03					
		7	1	3	<b>DisplayRequest (Display Request)</b>		1.0	0.0	0 - 5		
					NoRequest	0x00					
					RequestBusStopPage	0x01					
					PassengerRequestZones	0x02					
					Reserved	0x06					
					TakeNoAction	0x07					
		8	1	2	<b>EmergencyOpenerVisual (EmergencyOpenerVisual)</b>		1.0	0.0	0 - 3		
					NotActive	0x00					
					Active	0x01					
					Error	0x02					
					NotAvailable	0x03					
		8	3	2	<b>EmergencyOpenerSound (EmergencyOpenerSound)</b>		1.0	0.0	0 - 3		
					NotActive	0x00					
					Active	0x01					
					Error	0x02					
					NotAvailable	0x03					

Note 1) For BCI



### 2.4.1.4 BodyworkDriverInformation2 (Bodywork Driver Information 2) - Unknown

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18FF5CFE	100	100	00FF5C	6	Cyclic	0	0	5C	FE		Prop



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S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
X		1	1	4	<b>MessageConfigurationVersion (Message Configuration Version)</b>		1	0	0 - 0		
X		1	5	2	<b>DriverInformationRequest1 (Driver Information Request 1)</b>		1	0	0 - 3		1)
X					DriverInformationNotRequested	0x00					
X					DriverInformationRequested	0x01					
X					Reserved	0x02					
X					TakeNoAction	0x03					
X		1	7	2	<b>DriverInformationRequest2 (Driver Information Request 2)</b>		1	0	0 - 3		2)
X					DriverInformationNotRequested	0x00					
X					DriverInformationRequested	0x01					
X					Reserved	0x02					
X					TakeNoAction	0x03					
X		2	1	2	<b>DriverInformationRequest3 (Driver Information Request 3)</b>		1	0	0 - 3		3)
X					DriverInformationNotRequested	0x00					
X					DriverInformationRequested	0x01					
X					Reserved	0x02					
X					TakeNoAction	0x03					
X		2	3	2	<b>DriverInformationRequest4 (Driver Information Request 4)</b>		1	0	0 - 3		4)
X					DriverInformationNotRequested	0x00					
X					DriverInformationRequested	0x01					
X					Reserved	0x02					
X					TakeNoAction	0x03					
X		2	5	2	<b>DriverInformationRequest5 (Driver Information Request 5)</b>		1	0	0 - 3		5)
X					DriverInformationNotRequested	0x00					
X					DriverInformationRequested	0x01					
X					Reserved	0x02					
X					TakeNoAction	0x03					
X		2	7	2	<b>DriverInformationRequest6 (Driver Information Request 6)</b>		1	0	0 - 3		6)
X					DriverInformationNotRequested	0x00					
X					DriverInformationRequested	0x01					
X					Reserved	0x02					
X					TakeNoAction	0x03					
X		3	1	2	<b>DriverInformationRequest7 (Driver Information Request 7)</b>		1	0	0 - 3		7)
X					DriverInformationNotRequested	0x00					
X					DriverInformationRequested	0x01					
X					Reserved	0x02					
X					TakeNoAction	0x03					
X		3	3	2	<b>DriverInformationRequest8 (Driver Information Request 8)</b>		1	0	0 - 3		8)
X					DriverInformationNotRequested	0x00					
X					DriverInformationRequested	0x01					
X					Reserved	0x02					
X					TakeNoAction	0x03					
X		3	5	2	<b>DriverInformationRequest9 (Driver Information Request 9)</b>		1	0	0 - 3		9)

X					DriverInformationNotRequested	0x00					
X					DriverInformationRequested	0x01					
X					Reserved	0x02					
X					TakeNoAction	0x03					
X		3	7	2	<b>DriverInformationRequest10 (Driver Information Request 10)</b>		1	0	0 - 3		10)
X					DriverInformationNotRequested	0x00					
X					DriverInformationRequested	0x01					
X					Reserved	0x02					
X					TakeNoAction	0x03					
X		4	1	2	<b>ContinuousAlarmSound (Continuous Alarm Sound)</b>		1	0	0 - 0		
X					Disabled	0x00					
X					Enabled	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		4	3	2	<b>ContinuousWarningSound (Continuous Warning Sound)</b>		1	0	0 - 0		
X					Disabled	0x00					
X					Enabled	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		4	5	2	<b>SingleWarningSound (Single Warning Sound)</b>		1	0	0 - 0		
X					Disabled	0x00					
X					Enabled	0x01					
X					Error	0x02					
X					NotAvailable	0x03					

Note 1) Signal that activates body builder lamp and/or sound in ICL.

Note 2) Signal that activates body builder lamp and/or sound in ICL.

Note 3) Signal that activates body builder lamp and/or sound in ICL.

Note 4) Signal that activates body builder lamp and/or sound in ICL.

Note 5) Signal that activates body builder lamp and/or sound in ICL.

Note 6) Signal that activates body builder lamp and/or sound in ICL.

Note 7) Signal that activates body builder lamp and/or sound in ICL.

Note 8) Signal that activates body builder lamp and/or sound in ICL.

Note 9) Signal that activates body builder lamp and/or sound in ICL.

Note 10) Signal that activates body builder lamp and/or sound in ICL.



## 2.4.1.5 BodyworkEngineLimitation (Bodywork Engine Limitation) - Unknown

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/proprietary
0CFF2BFE	100	100	00FF2B	3	Cyclic	0	0	2B	FE		Prop

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
X		1	1	4	<b>MessageConfigurationVersion (Message Configuration Version)</b>		1	0	0 - 0		
X		1	5	2	<b>StaticEngineSpeedLimitRequest (Static Engine Speed Limit Request)</b>		1	0	0 - 3		
X					StaticEngineSpeedLimitNotRequested	0x00					
X					StaticEngineSpeedLimitRequested	0x01					
X					Reserved	0x02					
X					TakeNoAction	0x03					
X		1	7	2	<b>StaticEngineTorqueLimitRequest (Static Engine Torque Limit Request)</b>		1	0	0 - 3		
X					StaticEngineTorqueLimitNotRequested	0x00					
X					StaticEngineTorqueLimitRequested	0x01					
X					Reserved	0x02					
X					TakeNoAction	0x03					
		2	1	12	<b>DynamicEngineSpeedLimitRequest (Dynamic Engine Speed Limit Request)</b>		1.0	0.0	0 - 4015	rpm	
					DynamicEngineSpeedLimitNotRequested	0x0FB0					
					Reserved	0x0FE0					
					TakeNoAction	0x0FF0					
		4	1	12	<b>DynamicEngineTorqueLimitRequest (Dynamic Engine Torque Limit Request)</b>		10	0.0	0 - 40150	Nm	
					DynamicTorqueLimitNotRequested	0x0FB0					
					Reserved	0x0FE0					
					TakeNoAction	0x0FF0					

## 2.4.1.6 BodyworkEngineRequest1 (Bodywork Engine Request 1) - Unknown

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/proprietary
18FF5BFE	100	100	00FF5B	6	Cyclic	0	0	5B	FE		Prop

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
X		1	1	4	<b>MessageConfigurationVersion (Message Configuration Version)</b>		1	0	0 - 0		
X		1	5	4	<b>EngineControlModule (Engine Control Module)</b>		1	0	0 - 0		
X					NoRequest	0x00					
X					Module1	0x01					
X					Module2	0x02					
X					Module3	0x03					
X					Module4	0x04					
X					Error	0x0E					
X					NotAvailable	0x0F					
X		2	1	16	<b>EngineSpeedRequest (Engine Speed Request)</b>		0.125	0	0 - 8031.88	rpm	
X					Error	0xFE00					
X					NotAvailable	0xFF00					
X		6	1	2	<b>IncreasedIdleSpeedRequest (Increased Idle Speed Request)</b>		1	0	0 - 3		
X					IncreasedIdleSpeedNotRequested	0x00					
X					IncreasedIdleSpeedRequested	0x01					
X					Reserved	0x02					
X					TakeNoAction	0x03					
X		6	3	2	<b>IdleCommand (Idle Command)</b>		1	0	0 - 3		
X					IdleCommandNotRequested	0x00					
X					IdleCommandRequested	0x01					
X					Error	0x02					
X					NotAvailable	0x03					

**2.4.1.7 BodyworkEngineRequest2 (Bodywork Engine Request 2) - Unknown**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/proprietary
18FF5AFE	100	100	00FF5A	6	Cyclic	0	0	5A	FE		Prop

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
X		1	1	4	<b>MessageConfigurationVersion (Message Configuration Version)</b>		1	0	0 - 0		
X		2	1	2	<b>EngineStart (EngineStart)</b>		1	0	0 - 3	-	
X					Off	0x00					
X					On	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		2	5	2	<b>EngineShutdown (Engine Shutdown)</b>		1	0	0 - 0		
X					Off	0x00					
X					On	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		2	7	2	<b>EmergencyEngineShutdown (Emergency Engine Shutdown)</b>		1	0	0 - 0		
X					Off	0x00					
X					On	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		3	1	2	<b>InhibitAllStartRequest (Inhibit All Start Request)</b>		1	0	0 - 0		
X					Off	0x00					
X					On	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		3	3	2	<b>InhibitRemoteStartRequest (Inhibit Remote Start Request)</b>		1	0	0 - 0		
X					Off	0x00					
X					On	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		3	5	2	<b>InhibitKeyStartRequest (Inhibit Key Start Request)</b>		1	0	0 - 0		
X					Off	0x00					
X					On	0x01					
X					Error	0x02					
X					NotAvailable	0x03					

**2.4.1.8 BodyworkPTOControl (Bodywork PTO Control) - Unknown**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
0CFF2CFE	100	100	00FF2C	3	Cyclic	0	0	2C	FE		Prop

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
X		1	1	4	<b>MessageConfigurationVersion (Message Configuration Version)</b>		1	0	0 - 0		
X		1	5	2	<b>PTO_AL1_Request (PTO AL1 Request)</b>		1	0	0 - 0		
X					NotRequested	0x00					
X					Requested	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		1	7	2	<b>PTO_AL2_Request (PTO AL2 Request)</b>		1	0	0 - 0		
X					NotRequested	0x00					
X					Requested	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		2	1	2	<b>PTO_ED1_Request (PTO ED1 Request)</b>		1	0	0 - 0		
X					NotRequested	0x00					
X					Requested	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		2	3	2	<b>PTO_ED2_Request (PTO ED2 Request)</b>		1	0	0 - 0		
X					NotRequested	0x00					
X					Requested	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		2	5	2	<b>PTO_EK1_Request (PTO EK1 Request)</b>		1	0	0 - 0		
X					NotRequested	0x00					
X					Requested	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		2	7	2	<b>PTO_EG1_Request (PTO EG1 Request)</b>		1	0	0 - 0		
X					NotRequested	0x00					
X					Requested	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		3	1	2	<b>PTO_EG2_Request (PTO EG2 Request)</b>		1	0	0 - 0		
X					NotRequested	0x00					
X					Requested	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		3	5	2	<b>PTO_AWD1_Request (PTO AWD1 Request)</b>		1	0	0 - 0		
X					NotRequested	0x00					
X					Requested	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		3	7	2	<b>PTO_SplitShaft_Request (PTO SplitShaft Request)</b>		1	0	0 - 0		



X					NotRequested	0x00					
X					Requested	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		4	7	2	<b>PTOTorqueUsageIndicator (PTO Torque Usage Indicator)</b>		1	0	0 - 0		
X					PTOTorqueUsageIndicatorNotInUse	0x00					
X					PTOTorqueUsageIndicatorInUse	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		5	1	8	<b>PTOTorqueUsageRatio (PTO Torque Usage Ratio)</b>		0.4	0	0 - 100	Percent	
X					Error	0xFE					
X					NotAvailable	0xFF					

**2.4.1.9 BodyworkVehicleControl (Bodywork Vehicle Control) - Unknown**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
0CFF2AFE	100	100	00FF2A	3	Cyclic	0	0	2A	FE		Prop



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S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
X		1	1	4	<b>MessageConfigurationVersion (Message Configuration Version)</b>		1	0	0 - 0		
X		1	5	2	<b>OccupiedFootboard (Occupied Footboard)</b>		1	0	0 - 3		
X					Not Occupied	0x00					
X					Occupied	0x01					
X					Reserved	0x02					
X					TakeNoAction	0x03					
X		2	1	2	<b>BatteryMasterRelayHoldRequest (Battery Master Relay Hold Request)</b>		1	0	0 - 3		
X					Battery Master Relay Hold Not Requested	0x00					
X					Battery Master Relay Hold Requested	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		2	3	2	<b>AutomaticNeutralEnable (Automatic Neutral Enable)</b>		1	0	0 - 0		
X					AutomaticNeutralNotEnabled	0x00					
X					AutomaticNeutralEnabled	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		2	5	2	<b>ActivateBusStopBrake (Activate Bus Stop Brake)</b>		1	0	0 - 3		
X					ActivateBusStopBrakeNotRequested	0x00					
X					ActivateBusStopBrakeRequested	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		3	1	16	<b>DynamicVehicleSpeedLimitRequest (Requested vehicle speed limit)</b>		0.00390625	0	0 - 250.99609375	km/h	1)
X					NoRequest	0xFB00					
X					Error	0xFE00					
X					NotAvailable	0xFF00					
X		5	1	3	<b>StaticVehicleSpeedLimitRequest (Static Vehicle Speed Limit Request)</b>		1	0	0 - 0		
X					NoSpeedLimitRequested	0x00					
X					SpeedLimit2Requested	0x01					
X					SpeedLimit3Requested	0x02					
X					Reserved	0x03					
X					Reserved	0x04					
X					Reserved	0x05					
X					Reserved	0x06					
X					TakeNoAction	0x07					
		5	4	3	<b>ParkingBrakeRequest (Parking Brake Request)</b>		1.0	0.0	0 - 5		
					NoRequest	0x00					
					ParkingBrakeApplyRequest	0x01					
					ParkingBrakeReleaseRequest	0x02					
					Reserved	0x06					
					TakeNoAction	0x07					
X		6	1	2	<b>BRBLowSpeedActivate (Body Requested Braking Low Speed Activation)</b>		1	0	0 - 3		
X					NotRequested	0x00					
X					Requested	0x01					





X					Reserved	0x02					
X					TakeNoAction	0x03					
X		6	3	2	<b>BRBHighSpeed1Activate (Body Requested Braking Highspeed1 Activation)</b>		1	0	0 - 3		
X					NotRequested	0x00					
X					Requested	0x01					
X					Reserved	0x02					
X					TakeNoAction	0x03					
X		6	5	2	<b>BRBHighSpeed2Activate (Body Requested Braking Highspeed2 Activation)</b>		1	0	0 - 3		
X					NotRequested	0x00					
X					Requested	0x01					
X					Reserved	0x02					
X					TakeNoAction	0x03					

Note 1) Part of UF117

**2.4.1.10 BodyworkVisibilityControl (Bodywork Visibility Control) - Unknown**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
0CFF2FFE	100	100	00FF2F	3	Cyclic	0	0	2F	FE		Prop



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S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
X		1	1	4	<b>MessageConfigurationVersion (Message Configuration Version)</b>		1	0	0 - 0		
X		1	5	2	<b>WiperActivation (Wiper Activation)</b>		1	0	0 - 3		
X					WiperNotRequested	0x00					
X					WiperRequested	0x01					
X					Error	0x02					
X					NotRequested	0x03					
X		1	7	2	<b>HornRequest (Horn Request)</b>		1	0	0 - 3		
X					HornNotRequested	0x00					
X					HornRequested	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		2	1	2	<b>MainBeamRequest (Main Beam Request)</b>		1	0	0 - 3		
X					MainBeamNotRequested	0x00					
X					MainBeamRequested	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		2	3	2	<b>AlternatingMainBeamFlash (Alternating Main Beam Flash)</b>		1	0	0 - 0		
X					AlternatingFlashNotRequested	0x00					
X					AlternatingFlashRequested	0x01					
X					Reserved	0x02					
X					TakeNoAction	0x03					
X		2	5	2	<b>WorkLightControl (Work Light Control)</b>		1	0	0 - 3		
X					WorkLightOffRequested	0x00					
X					WorkLightOnRequested	0x01					
X					Reserved	0x02					
X					TakeNoAction	0x03					
X		2	7	2	<b>HazardLampRequest (Hazard Lamp Request)</b>		1	0	0 - 3		
X					HazardLampNotRequested	0x00					
X					HazardLampRequested	0x01					
X					Error	0x02					
X					NotRequested	0x03					
X		3	1	2	<b>DrivingLightDeactivation (Driving Light Deactivation)</b>		1	0	0 - 0		
X					DeactivationNotRequested	0x00					
X					DeactivationRequested	0x01					
X					Reserved	0x02					
X					TakeNoAction	0x03					
		3	3	2	<b>AlternatingMainBeamFlashRequest (Alternating Main Beam Flash Request)</b>		1.0	0.0	0 - 3		
					NotRequested	0x00					
					Mode1	0x01					
					Mode2	0x02					
					TakeNoAction	0x03					
		3	5	2	<b>RemoteWindscreenWiperRequest (Remote Windscreen Wiper Request)</b>		1.0	0.0	0 - 3		



					NotRequested	0x00					
					LowSpeedRequested	0x01					
					HighSpeedRequested	0x02					
					TakeNoAction	0x03					

**2.4.1.11 DoorControl1 (Door Control 1) - Unknown**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18FE4EFE	100	100	00FE4E	6	Cyclic	0	0	4E	FE		Std



## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
X		1	1	4	<b>PositionOfDoors (Position of Doors)</b>		1	0	0 - 15		
X					AtLeast1DoorIsOpen	0x00					
X					ClosingLastDoor	0x01					
X					AllDoorsClosed	0x02					
X					Error	0x0E					
X					NotAvailable	0x0F					
X		1	5	2	<b>Ramp_WheelchairLiftStatus (Ramp/Wheel Chair Lift Status)</b>		1	0	0 - 3		
X					InsideBus	0x00					
X					OutsideBus	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		1	7	2	<b>Status2OfDoors (Status 2 of Doors)</b>		1	0	0 - 3		
X					AllBusDoorsAreDisabled	0x00					
X					AtLeast1BusDoorEnabled	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
		2	1	2	<b>DoorMalfunction (Door Malfunction)</b>		1.0	0.0	0 - 3		
					False	0x00					
					True	0x01					
					Error	0x02					
					NotAvailable	0x03					
		2	3	2	<b>DoorOpen (Door Open)</b>		1.0	0.0	0 - 3		
					False	0x00					
					True	0x01					
					Error	0x02					
					NotAvailable	0x03					
		2	5	2	<b>DoorPressureLow (Door Pressure Low)</b>		1.0	0.0	0 - 3		
					False	0x00					
					True	0x01					
					Error	0x02					
					NotAvailable	0x03					
		2	7	2	<b>SensingStripInDoorTriggered (Sensing Strip In Door Triggered)</b>		1.0	0.0	0 - 3		
					False	0x00					
					True	0x01					
					Error	0x02					
					NotAvailable	0x03					
		3	1	2	<b>EmergencyExitOpen (Emergency Exit Open)</b>		1.0	0.0	0 - 3		
					False	0x00					
					True	0x01					
					Error	0x02					
					NotAvailable	0x03					
		3	3	2	<b>DriverGateOpen (Driver Gate Open)</b>		1.0	0.0	0 - 3		
					False	0x00					



					True	0x01					
					Error	0x02					
					NotAvailable	0x03					

**2.4.1.12 DoorControl2 (Door Control 2) - Unknown**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18FDA5FE	100	100	00FDA5	6	Cyclic	0	0	A5	FE		Std





## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
X		1	1	2	<b>LockStatusOfDoor1 (Lock Status Of Door 1)</b>		1	0	0 - 3		
X					Unlocked	0x00					
X					Locked	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		1	3	2	<b>OpenStatusOfDoor1 (Open Status Of Door 1)</b>		1	0	0 - 3		
X					DoorClosed	0x00					
X					DoorOpened	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		1	5	2	<b>EnableStatusOfDoor1 (Enable Status Of Door 1)</b>		1	0	0 - 3		
X					DoorDisabled	0x00					
X					DoorEnabled	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		1	7	2	<b>LockStatusOfDoor2 (Lock Status Of Door 2)</b>		1	0	0 - 3		
X					Unlocked	0x00					
X					Locked	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		2	1	2	<b>OpenStatusOfDoor2 (Open Status Of Door 2)</b>		1	0	0 - 3		
X					DoorClosed	0x00					
X					DoorOpened	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		2	3	2	<b>EnableStatusOfDoor2 (Enable Status Of Door 2)</b>		1	0	0 - 3		
X					DoorDisabled	0x00					
X					DoorEnabled	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		2	5	2	<b>LockStatusOfDoor3 (Lock Status Of Door 3)</b>		1	0	0 - 3		
X					Unlocked	0x00					
X					Locked	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		2	7	2	<b>OpenStatusOfDoor3 (Open Status Of Door 3)</b>		1	0	0 - 3		
X					DoorClosed	0x00					
X					DoorOpened	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		3	1	2	<b>EnableStatusOfDoor3 (Enable Status Of Door 3)</b>		1	0	0 - 3		
X					DoorDisabled	0x00					
X					DoorEnabled	0x01					



X					Error	0x02						
X					NotAvailable	0x03						
X		3	3	2	<b>LockStatusOfDoor4 (Lock Status Of Door 4)</b>		1	0	0 - 3			
X					Unlocked	0x00						
X					Locked	0x01						
X					Error	0x02						
X					NotAvailable	0x03						
X		3	5	2	<b>OpenStatusOfDoor4 (Open Status Of Door 4)</b>		1	0	0 - 3			
X					DoorClosed	0x00						
X					DoorOpened	0x01						
X					Error	0x02						
X					NotAvailable	0x03						
X		3	7	2	<b>EnableStatusOfDoor4 (Enable Status Of Door 4)</b>		1	0	0 - 3			
X					DoorDisabled	0x00						
X					DoorEnabled	0x01						
X					Error	0x02						
X					NotAvailable	0x03						
X		4	1	2	<b>LockStatusOfDoor5 (Lock Status Of Door 5)</b>		1	0	0 - 3			
X					Unlocked	0x00						
X					Locked	0x01						
X					Error	0x02						
X					NotAvailable	0x03						
X		4	3	2	<b>OpenStatusOfDoor5 (Open Status Of Door 5)</b>		1	0	0 - 3			
X					DoorClosed	0x00						
X					DoorOpened	0x01						
X					Error	0x02						
X					NotAvailable	0x03						
X		4	5	2	<b>EnableStatusOfDoor5 (Enable Status Of Door 5)</b>		1	0	0 - 3			
X					DoorDisabled	0x00						
X					DoorEnabled	0x01						
X					Error	0x02						
X					NotAvailable	0x03						
X		4	7	2	<b>LockStatusOfDoor6 (Lock Status Of Door 6)</b>		1	0	0 - 3			
X					Unlocked	0x00						
X					Locked	0x01						
X					Error	0x02						
X					NotAvailable	0x03						
X		5	1	2	<b>OpenStatusOfDoor6 (Open Status Of Door 6)</b>		1	0	0 - 3			
X					DoorClosed	0x00						
X					DoorOpened	0x01						
X					Error	0x02						
X					NotAvailable	0x03						
X		5	3	2	<b>EnableStatusOfDoor6 (Enable Status Of Door 6)</b>		1	0	0 - 3			
X					DoorDisabled	0x00						
X					DoorEnabled	0x01						
X					Error	0x02						
X					NotAvailable	0x03						
X		5	5	2	<b>LockStatusOfDoor7 (Lock Status Of Door 7)</b>		1	0	0 - 3			
X					Unlocked	0x00						
X					Locked	0x01						



X				Error	0x02					
X				NotAvailable	0x03					
X		5	7	2	<b>OpenStatusOfDoor7 (Open Status Of Door 7)</b>	1	0	0 - 3		
X					DoorClosed	0x00				
X					DoorOpened	0x01				
X					Error	0x02				
X					NotAvailable	0x03				
X		6	1	2	<b>EnableStatusOfDoor7 (Enable Status Of Door 7)</b>	1	0	0 - 3		
X					DoorDisabled	0x00				
X					DoorEnabled	0x01				
X					Error	0x02				
X					NotAvailable	0x03				
X		6	3	2	<b>LockStatusOfDoor8 (Lock Status Of Door 8)</b>	1	0	0 - 3		
X					Unlocked	0x00				
X					Locked	0x01				
X					Error	0x02				
X					NotAvailable	0x03				
X		6	5	2	<b>OpenStatusOfDoor8 (Open Status Of Door 8)</b>	1	0	0 - 3		
X					DoorClosed	0x00				
X					DoorOpened	0x01				
X					Error	0x02				
X					NotAvailable	0x03				
X		6	7	2	<b>EnableStatusOfDoor8 (Enable Status Of Door 8)</b>	1	0	0 - 3		
X					DoorDisabled	0x00				
X					DoorEnabled	0x01				
X					Error	0x02				
X					NotAvailable	0x03				
X		7	1	2	<b>LockStatusOfDoor9 (Lock Status Of Door 9)</b>	1	0	0 - 3		
X					Unlocked	0x00				
X					Locked	0x01				
X					Error	0x02				
X					NotAvailable	0x03				
X		7	3	2	<b>OpenStatusOfDoor9 (Open Status Of Door 9)</b>	1	0	0 - 3		
X					DoorClosed	0x00				
X					DoorOpened	0x01				
X					Error	0x02				
X					NotAvailable	0x03				
X		7	5	2	<b>EnableStatusOfDoor9 (Enable Status Of Door 9)</b>	1	0	0 - 3		
X					DoorDisabled	0x00				
X					DoorEnabled	0x01				
X					Error	0x02				
X					NotAvailable	0x03				
X		7	7	2	<b>LockStatusOfDoor10 (Lock Status Of Door 10)</b>	1	0	0 - 3		
X					Unlocked	0x00				
X					Locked	0x01				
X					Error	0x02				
X					NotAvailable	0x03				
X		8	1	2	<b>OpenStatusOfDoor10 (Open Status Of Door 10)</b>	1	0	0 - 3		
X					DoorClosed	0x00				
X					DoorOpened	0x01				



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X					Error	0x02					
X					NotAvailable	0x03					
X		8	3	2	<b>EnableStatusOfDoor10 (Enable Status Of Door 10)</b>		1	0	0 - 3		
X					DoorDisabled	0x00					
X					DoorEnabled	0x01					
X					Error	0x02					
X					NotAvailable	0x03					

**2.4.1.13 DoorRampControl (Door Ramp Control) - Unknown**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18FD70FE	1000	1000	00FD70	6	On Change	0	0	70	FE		Std

1 s when active and on change of state.



## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
X		1	1	2	<b>RetractStatusRamp1 (Retract Status of Ramp 1)</b>		1	0	0 - 3		
X					RampRetracted	0x00					
X					RampExtended	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		1	3	2	<b>EnableStatusRamp1 (Enable Status of Ramp 1)</b>		1	0	0 - 3		
X					RampDisabled	0x00					
X					RampEnabled	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		1	5	2	<b>MovementStatusRamp1 (Movement Status of Ramp 1)</b>		1	0	0 - 3		
X					RampNotBeingMoved	0x00					
X					RampBeingMoved	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		2	1	2	<b>RetractStatusRamp2 (Retract Status of Ramp 2)</b>		1	0	0 - 3		
X					RampRetracted	0x00					
X					RampExtended	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		2	3	2	<b>EnableStatusRamp2 (Enable Status of Ramp 2)</b>		1	0	0 - 3		
X					RampDisabled	0x00					
X					RampEnabled	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		2	5	2	<b>MovementStatusRamp2 (Movement Status of Ramp 2)</b>		1	0	0 - 3		
X					RampNotBeingMoved	0x00					
X					RampBeingMoved	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		3	1	2	<b>RetractStatusRamp3 (Retract Status of Ramp 3)</b>		1	0	0 - 3		
X					RampRetracted	0x00					
X					RampExtended	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		3	3	2	<b>EnableStatusRamp3 (Enable Status of Ramp 3)</b>		1	0	0 - 3		
X					RampDisabled	0x00					
X					RampEnabled	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		3	5	2	<b>MovementStatusRamp3 (Movement Status of Ramp 3)</b>		1	0	0 - 3		
X					RampNotBeingMoved	0x00					
X					RampBeingMoved	0x01					



X					Error	0x02					
X					NotAvailable	0x03					
X		4	1	2	<b>RetractStatusRamp4 (Retract Status of Ramp 4)</b>		1	0	0 - 3		
X					RampRetracted	0x00					
X					RampExtended	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		4	3	2	<b>EnableStatusRamp4 (Enable Status of Ramp 4)</b>		1	0	0 - 3		
X					RampDisabled	0x00					
X					RampEnabled	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		4	5	2	<b>MovementStatusRamp4 (Movement Status of Ramp 4)</b>		1	0	0 - 3		
X					RampNotBeingMoved	0x00					
X					RampBeingMoved	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		5	1	2	<b>RetractStatusRamp5 (Retract Status of Ramp 5)</b>		1	0	0 - 3		
X					RampRetracted	0x00					
X					RampExtended	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		5	3	2	<b>EnableStatusRamp5 (Enable Status of Ramp 5)</b>		1	0	0 - 3		
X					RampDisabled	0x00					
X					RampEnabled	0x01					
X					Error	0x02					
X					NotAvailable	0x03					
X		5	5	2	<b>MovementStatusRamp5 (Movement Status of Ramp 5)</b>		1	0	0 - 3		
X					RampNotBeingMoved	0x00					
X					RampBeingMoved	0x01					
X					Error	0x02					
X					NotAvailable	0x03					

**2.4.1.14 PowerManagementControl (PowerManagementControl) - Unknown**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18FF15FE	500	500	00FF15	6	Cyclic	0	0	15	FE		Prop





## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
X		1	1	2	<b>PowerManagerRequest (Power Manager Request)</b>		1	0	0 - 3		
X					PauseOk	0x00					
X					PowerOnRequired	0x01					
X					KeepRequested	0x02					
X					TakeNoAction	0x03					
		1	3	2	<b>AutoEngineStopAllowed (Auto Engine Stop Allowed)</b>		1.0	0.0	0 - 3	-	
					AutoStopNotOK	0x00					
					AutoStopOK	0x01					
					Error	0x02					
					NotAvailable	0x03					
		2	1	8	<b>EnginePauseInhibitReason (Engine Pause Inhibit Reason)</b>		1	0	0 - 255	-	1)
					NoEnginePauseInhibitRequested	0x00					
					EngineTemperature	0x01					
					AdaptationOrEmissionControlActive	0x02					
					FilterRegenerationActive	0x03					
					EngineNotAtIdle	0x04					
					StarterMotorProtection	0x05					
					Engine – Other	0x06					
					PTOEngaged	0x07					
					BrakeNotApplied	0x08					
					BodyworkRequestedInhibit	0x09					
					AirSupplyLow	0x0A					
					AirProcessingColdModeActive	0x0B					
					PropulsionBatteryStateOfChargeInsufficient	0x0C					
					PropulsionBatteryTemperature	0x0D					
					InverterTemperature	0x0E					
					ElectricMotorTemperature	0x0F					
					24VBatteryStateOfChargeInsufficient	0x10					
					WorkshopTest	0x11					
					AirProcessingFailure	0x12					
					HybridSystemMalfunction	0x13					
					GearboxAdaptation	0x14					
					EngineNeededForPropulsion	0x15					
					EngineDurability	0x16					
					VehicleSpeedTooHigh	0x17					
					NotAvailable	0xFF					
		3	1	2	<b>PauseConditionsFulfilled ()</b>		0	0	0 - 3		
					PauseConditionsNotFulfilled	0x00					
					PauseConditionsFulfilled	0x01					
					Reserved	0x02					
					Don'tCare	0x03					
		3	6	3	<b>EvModePowerManagerRequest (EvModePowerManagerRequest)</b>		1.0	0.0	0 - 5		
					PausOK	0x00					
					PowerOnRequired	0x01					
					KeepRequested	0x02					
					DisableEvModeDemand	0x03					
					TakeNoAction	0x07					

		4	1	8	<b>EvModeEnginePauseInhibitReason (EvModeEnginePauseInhibitReason)</b>		1.0	0.0	0 - 250		
					NoEnginePauseInhibitRequested	0x00					
					EngineTemperature	0x01					
					AdaptationOrEmissionControlActive	0x02					
					FilterRegenerationActive	0x03					
					EngineNotAtIdle	0x04					
					StarterMotorProtection	0x05					
					Engine – Other	0x06					
					PTOEngaged	0x07					
					BrakeNotApplied	0x08					
					BodyworkRequestedInhibit	0x09					
					AirSupplyLow	0x0A					
					AirProcessingColdModeActive	0x0B					
					PropulsionBatteryStateOfChargeInsufficient	0x0C					
					PropulsionBatteryTemperature	0x0D					
					InverterTemperature	0x0E					
					ElectricMotorTemperature	0x0F					
					24VBatteryStateOfChargeInsufficient	0x10					
					WorkshopTest	0x11					
					AirProcessingFailure	0x12					
					HybridSystemMalfunction	0x13					
					GearboxAdaptation	0x14					
					EngineNeededForPropulsion	0x15					
					EngineDurability	0x16					
					VehicleSpeedTooHigh	0x17					
					NotAvailable	0xFF					

Note 1) Communicates the reason that an inhibit pause request has been sent in corresponding signal Power Manager Engine Request.



### 2.4.2 Received messages: PDU1, Destination Address; 0xFF / Global / FF

#### 2.4.2.1 ASC2 (Air Suspension Control 2) - K -> FF

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/proprietary
0CD2FF27	100	100	00D200	3	Cyclic	0	0		27	FF	Std



S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
		1	1	2	<b>AutomaticTractionHelp_LoadTransf</b> <b>(Automatic Traction Help)</b>		1	0	0 - 3		
					DisableAutomaticTractionHelp	0x00					
					EnableAutomaticTractionHelp	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		1	3	2	<b>KneelingRequestLeftSide (Kneeling</b> <b>Request Left Side)</b>		1	0	0 - 3		
					NoKneelingRequest	0x00					
					KneelingRequest	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		1	5	2	<b>KneelingRequestRightSide (Kneeling</b> <b>Request Right Side)</b>		1	0	0 - 3		
					NoKneelingRequest	0x00					
					KneelingRequest	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		1	7	2	<b>KneelingControlModeRequest (Kneeling</b> <b>Control Mode Request)</b>		1	0	0 - 3		
					AutomaticallyActuated	0x00					
					ManuallyActuated	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
	X	2	1	4	<b>NominalLevelRequestFrontAxle (Nominal</b> <b>Level Request Front Axle)</b>		1	0	0 - 15		
	X				NoLevelRequest	0x00					
	X				NormalLevel1	0x01					
	X				NormalLevel2	0x02					
	X				NormalLevel3	0x03					
	X				PresetLevel	0x04					
	X				CustomerLevel	0x05					
	X				UpperLevel	0x06					
	X				LowerLevel	0x07					
	X				StopLevelChange	0x08					
	X				Raise Request (Continuously raising front axle, as long as active)	0x09					
	X				Lower Request (Continuously lowering front axle, as long as active)	0x0A					
	X				Reserved	0x0E					
	X				TakeNoAction	0x0F					
	X	2	5	4	<b>NominalLevelRequestRearAxle (Nominal</b> <b>Level Request Rear Axle)</b>		1	0	0 - 15		
	X				NoLevelRequest	0x00					
	X				NormalLevel1	0x01					
	X				NormalLevel2	0x02					
	X				NormalLevel3	0x03					
	X				PresetLevel	0x04					
	X				CustomerLevel	0x05					
	X				UpperLevel	0x06					
	X				LowerLevel	0x07					
	X				StopLevelChange	0x08					



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	X				Raise Request (Continuously raising rear axle, as long as active).	0x09							
	X				Lower Request (Continuously lowering rear axle, as long as active)	0x0A							
	X				Reserved	0x0E							
	X				TakeNoAction	0x0F							
		3	1	4	<b>LevelControlModeRequest (Level Control Mode Request)</b>		1	0	0 - 15				
					NormalOperation	0x00							
					TractionHelp(LoadTransfer, Increase)	0x01							
					LoadFixing	0x02							
					PressureRatio1	0x03							
					PressureRatio2	0x04							
					OptimumTraction1	0x05							
					OptimumTraction2	0x06							
					TractionHelp(LoadTransfer, Reduce)	0x07							
					ExhaustBellows	0x08							
					ForceToBumperLevel	0x09							
					Reserved	0x0E							
					TakeNoAction	0x0F							
		3	5	2	<b>LiftAxle1PositionCommand (Lift Axle 1 Position Command)</b>		1	0	0 - 3				
					LiftAxle1PositionDown_TagAxleLaden	0x00							
					LiftAxle1PositionUp_TagAxleUnladen	0x01							
					Reserved	0x02							
					TakeNoAction	0x03							
		3	7	2	<b>LiftAxle2PositionCommand (Lift Axle 2 Position Command)</b>		1	0	0 - 3				
					LiftAxle2PositionDown_TagAxleLaden	0x00							
					LiftAxle2PositionUp_TagAxleUnladen	0x01							
					Reserved	0x02							
					TakeNoAction	0x03							
		4	1	8	<b>DamperStiffnessRequestFrontAxle (Damper Stiffness Request Front Axle)</b>		0.4	0	0 - 100	%			
					Error	0xFE00							
					NotAvailable	0xFF00							
		5	1	8	<b>DamperStiffnessRequestRearAxle (Damper Stiffness Request Rear Axle)</b>		0.4	0	0 - 100	%			
					Error	0xFE00							
					NotAvailable	0xFF00							
		6	1	8	<b>DamperStiffnessReqstTag_LiftAxle (Damper Stiffness Request Lift/Tag Axle)</b>		0.4	0	0 - 100	%			
					Error	0xFE00							
					NotAvailable	0xFF00							
		7	1	2	<b>KneelingCommandFrontAxle (Kneeling Command Front Axle)</b>		1	0	0 - 3				
					NoKneelingRequest	0x00							
					KneelingRequest	0x01							
					Reserved	0x02							
					TakeNoAction	0x03							
		7	3	2	<b>KneelingCommandRearAxle (Kneeling Command Rear Axle)</b>		1	0	0 - 3				
					NoKneelingRequest	0x00							
					KneelingRequest	0x01							
					Reserved	0x02							
					TakeNoAction	0x03							
		7	5	2	<b>ProhibitAirSuspensionControl (Prohibit air suspension control)</b>		1	0	0 - 3				
					No request	0x00							
					Request prohibit air suspension control	0x01							



				Error	0x02					
				NotAvailable	0x03					
	7	7	2	<b>AllowLevelCntrDuringBrkCmd (Allow Level Control During Braking Command)</b>		1	0	0 - 3		
				Disallow level control during braking (normal operation)	0x00					
				Allow level control during braking	0x01					
				Reserved	0x02					
				Don'tCare/TakeNoAction	0x03					
	8	1	2	<b>SpeedDependatLevelCntrReq (Speed Dependat LevelControl Request)</b>		1	0	0 - 3		
				Deactivate	0x00					
				Activate	0x01					
				Reserved	0x02					
				Don'tCare/TakeNoAction	0x03					
	8	3	2	<b>ProhibitAutomAirSuspensionCntr (Prohibit Automatic Air Suspension Control)</b>		1	0	0 - 3		
				No request	0x00					
				Request prohibit automatic air suspension control	0x01					
				Error	0x02					
				NotAvailable	0x03					
	8	5	4	<b>MemoryLevelRequest (Memory Level Request)</b>		1	0	0 - 0		
				NoMemoryLevelRequest	0x00					
				MemoryLevel1Request	0x01					
				MemoryLevel2Request	0x02					
				MemoryLevel3Request	0x03					
				MemoryLevel4Request	0x04					
				MemoryLevel5Request	0x05					
				Reserved	0x06					
				Reserved	0x07					
				Reserved	0x08					
				StoreMemoryLevel1	0x09					
				StoreMemoryLevel2	0x0A					
				StoreMemoryLevel3	0x0B					
				StoreMemoryLevel4	0x0C					
				StoreMemoryLevel5	0x0D					
				Reserved	0x0E					
				Don'tCare	0x0F					

**2.4.2.2 Illumination (Cab Illumination Message) - ICL -> FF**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/proprietary
18D0FF17	100	100	00D000	6	Cyclic	0	0		17	FF	Std

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	8	<b>IlluminationBrightnessPercent (Illumination Brightness Percent)</b>		0.4	0	0 - 100	%	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
		2	1	8	<b>SwitchBacklightIlluminationBrightnessPercent (Switch Backlight Illumination Brightness Percent)</b>		0.4	0.0	0 - 100	%	
					Error	0xFE					
					NotAvailable	0xFF					
		3	1	8	<b>SwitchIndicationIlluminationBrightnessPercent (Switch Indication Illumination Brightness Percent)</b>		0.4	0	0 - 100	%	1)
					Error	0xFE					
					NotAvailable	0xFF					

Note 1) From J1939: If a single device is used to control both the backlight brightness level of the cab display and switches, see SPN 1487.

**2.4.2.3 TC1 (Transmission Control 1) - SC -> FF**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
0C01FF05	50	50	000100	3	Cyclic	0	0		05	FF	Std





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S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
		1	1	2	<b>GearShiftInhibitRqst (Gear Shift Inhibit Request)</b>		1	0	0 - 3		
					GearShiftsAreAllowed	0x00					
					GearShiftsAreInhibited	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		1	3	2	<b>TorqueConverterLockDisbleRqst (Torque Converter Lockup Disable Request)</b>		1	0	0 - 3		
					AllowTorqueConvertorLockup	0x00					
					DisableTorqueConvertorLockup	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		1	5	2	<b>DisengageDrivelineRqst (Disengage Driveline Request)</b>		1	0	0 - 3		
					AllowDrivelineEngagement	0x00					
					DisengageDriveline	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		1	7	2	<b>TransRevGearShiftInhibitRq (Transmission Reverse Gear Shift Inhibit Request)</b>		1	0	0 - 3		
					Allow Reverse Gear Shift	0x00					
					Inhibit Reverse Gear Shift	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		2	1	8	<b>RqstedPercentClutchSlip (Requested Percent Clutch Slip)</b>		0.4	0	0 - 100	%	
					Reserved	0xFE					
					TakeNoAction	0xFF					
	X	3	1	8	<b>RqstedGear (Requested Gear)</b>		1	-125	-125 - 125		1)
	X				Reserved	0x3D					
	X				ReversePos	0x7C					
	X				NeutralPos	0x7D					
	X				ReverseSelectorPos	0xDF					
	X				PsUnknownAnd_OrNoButtonsPressed	0xE0					
	X				PrssOfMmntryBtnTRsletCrrntPos	0xE1					
	X				BtwnRvrsAndPrkShiftSelectorPoss	0xE2					
	X				BtwnNtrlAndRvrsShiftSelectorPoss	0xE3					
	X				BtwnDrvAndNtrlShiftSelectorPoss	0xE4					
	X				BtwnD1AndDriveShiftSelectorPoss	0xE5					
	X				BetweenD2AndD1ShiftSelectorPoss	0xE6					
	X				BetweenD3AndD2ShiftSelectorPoss	0xE7					
	X				BetweenD4AndD3ShiftSelectorPoss	0xE8					
	X				BetweenD5AndD4ShiftSelectorPoss	0xE9					
	X				BetweenD6AndD5ShiftSelectorPoss	0xEA					
	X				BetweenD7AndD6ShiftSelectorPoss	0xEB					
	X				BtwnTwoForwardShiftSelectorPoss	0xEC					
	X				BtwnTwoReverseShiftSelectorPoss	0xED					
	X				BetweenTwoShiftSelectorPoss	0xEE					
	X				D77thFrwrdsSlctrPsRfncdFrmDrive	0xEF					
	X				D66thFrwrdsSlctrPsRfncdFrmDrive	0xF0					



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X				D55thFrwrdsIctrPsRfncdFrmDrive	0xF1					
X				D44thFrwrdsIctrPsRfncdFrmDrive	0xF2					
X				D33rdFrwrdsIctrPsRfncdFrmDrive	0xF3					
X				D22ndFrwrdsIctrPsRfncdFrmDrive	0xF4					
X				D11stFrwrdsIctrPsRfncdFrmDrive	0xF5					
X				Downshift2GearsFromCurrentPos	0xF6					
X				Downshift1GearFromCurrentPos	0xF7					
X				Upshift2GearsFromCurrentPos	0xF8					
X				Upshift1GearFromCurrentPos	0xF9					
X				ForwardLowPos	0xFA					
X				ParkPos	0xFB					
X				ForwardDrivePos	0xFC					
X				HoldCurrentGear	0xFD					
X				Error	0xFE					
X				NotAvailable	0xFF					
	4	1	2	<b>DisengageDiff_Lock1FrontAxle1 (Disengage Diff Lock Request: FrontAxle1)</b>		1	0	0 - 3		
				EngageDiffLock	0x00					
				DisengageDiffLock	0x01					
				Reserved	0x02					
				TakeNoAction	0x03					
	4	3	2	<b>DisengageDiff_Lock1FrontAxle2 (Disengage Diff Lock Request: FrontAxle2)</b>		1	0	0 - 3		
				EngageDiffLock	0x00					
				DisengageDiffLock	0x01					
				Reserved	0x02					
				TakeNoAction	0x03					
	4	5	2	<b>DisengageDiff_Lock1RearAxle1 (Disengage Diff Lock Request: RearAxle1)</b>		1	0	0 - 3		
				EngageDiffLock	0x00					
				DisengageDiffLock	0x01					
				Reserved	0x02					
				TakeNoAction	0x03					
	4	7	2	<b>DisengageDiff_Lock1RearAxle2 (Disengage Diff Lock Request: RearAxle2)</b>		1	0	0 - 3		
				EngageDiffLock	0x00					
				DisengageDiffLock	0x01					
				Reserved	0x02					
				TakeNoAction	0x03					
	5	1	2	<b>DisengageDiff_Lock2Central (Disengage Diff Lock Request: Central)</b>		1	0	0 - 3		
				EngageDiffLock	0x00					
				DisengageDiffLock	0x01					
				Reserved	0x02					
				TakeNoAction	0x03					
	5	3	2	<b>DisengageDiff_Lock2CentralFront (Disengage Diff Lock Request: CentralFront)</b>		1	0	0 - 3		
				EngageDiffLock	0x00					
				DisengageDiffLock	0x01					
				Reserved	0x02					
				TakeNoAction	0x03					
	5	5	2	<b>DisengageDiff_Lock2CentralRear (Disengage Diff Lock Request: CentralRear)</b>		1	0	0 - 3		
				EngageDiffLock	0x00					
				DisengageDiffLock	0x01					
				Reserved	0x02					
				TakeNoAction	0x03					



		5	7	2	<b>TransmLoadReductionInhibitReq (Transmission load reduction inhibit request)</b>		1	0	0 - 3		
					AllowTransmissionLoadReductionFunctions	0x00					
					InhibitTransmissionLoadReductionFunctions	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		6	1	2	<b>TransMode1 (TransMode1)</b>		1	0	0 - 3		
					Disable	0x00					
					Enable	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		6	3	2	<b>TransMode2 (TransMode2)</b>		1	0	0 - 3		
					Disable	0x00					
					Enable	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		6	5	2	<b>TransMode3 (TransMode3)</b>		1	0	0 - 3		
					Disable	0x00					
					Enable	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
	X	6	7	2	<b>TransMode4 (TransMode4)</b>		1	0	0 - 3		
	X				Disable	0x00					
	X				Enable	0x01					
	X				Reserved	0x02					
	X				TakeNoAction	0x03					
		7	3	4	<b>TransRequestedLaunchGear (Transmission Requested Launch Gear)</b>		1	0	0 - 0		
					No specific launch gear requested; use default launch gear	0x00					
					Launch the vehicle in 1st gear	0x01					
					Launch the vehicle in 2nd gear	0x02					
					Launch the vehicle in 3rd gear	0x03					
					Launch the vehicle in 4th gear	0x04					
					Launch the vehicle in 5th gear	0x05					
					Launch the vehicle in 6th gear	0x06					
					Launch the vehicle in 7th gear	0x07					
					Launch the vehicle in 8th gear	0x08					
					Launch the vehicle in Reverse 1	0x09					
					Launch the vehicle in Reverse 2	0x0A					
					Launch the vehicle in Reverse 3	0x0B					
					Launch the vehicle in Reverse 4	0x0C					
					Reserved	0x0D					
					Error	0x0E					
					NotAvailable	0x0F					
		7	7	2	<b>TrnsShftSlctorDisplayModeSwitch (TrnsShftSlctorDisplayModeSwitch)</b>		1	0	0 - 3		
					Off	0x00					
					On	0x01					
					Error	0x02					
					NotAvailable	0x03					
		8	1	2	<b>TransMode5 (Transmission Mode 5)</b>		1	0	0 - 3		
					Disable	0x00					
					Enable	0x01					



					Reserved	0x02					
					TakeNoAction	0x03					
		8	3	2	<b>TransMode6 (Transmission Mode 6)</b>		1	0	0 - 3		
					Disable	0x00					
					Enable	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		8	5	2	<b>TransMode7 (Transmission Mode 7)</b>		1	0	0 - 3		
					Disable	0x00					
					Enable	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		8	7	2	<b>TransMode8 (Transmission Mode 8)</b>		1	0	0 - 3		
					Disable	0x00					
					Enable	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					

Note 1) Only valid for comfort shift.



### 2.4.2.4 TP\_CM (Transport Protocol - Connection Mgmt) - E -> FF

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/proprietary
18ECFF00	1000	10000	00EC00	6	When Active	0	0		00	FF	Std

See J1939-21 for details. Transmission repetition rate: Per the Parameter Group Number to be transferred.

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	8	<b>ControlByteTP_CM (Control Byte, Transport Protocol)</b>		1	0	0 - 255		
	X				Destination Specific Request_To_Send (RTS)	0x10					
	X				Destination Specific Clear_To_Send (CTS)	0x11					
	X				End_of_Message Acknowledge(END)	0x13					
	X				BroadcastAnnounceMessage(BAM)	0x20					
	X				ConnectionAbort(ABO)	0xFF					
		2	1	8	<b>TPCM_ABO_ConnectionAbortReason (Connection Abort Reason)</b>		1	0	0 - 250		1)
					Already in one or more connection managed sessions and cannot support another.	0x01					
					System resources were needed for another task so this connection managed session was terminated.	0x02					
					A timeout occurred and this is the connection abort to close the session.	0x03					
					Error	0xFE					
					NotAvailable	0xFF					
	X	2	1	16	<b>TPCM_BAM_TotalMessageSize (Total Message Size)</b>		1	0	0 - 64255	byte	2)
		2	1	8	<b>TPCM_CTS_NumberOfPackets (Number Of Packets that can be sent)</b>		1	0	0 - 255		3)
		2	1	16	<b>TPCM_END_TotalMessageSize (Total Message Size)</b>		1	0	0 - 64255	byte	4)
		2	1	16	<b>TPCM_RTS_TotalMessageSize (Total Message Size)</b>		1	0	0 - 64255	byte	5)
		3	1	8	<b>TPCM_CTS_NextPacket (Next packet number to be sent)</b>		1	0	0 - 255		6)
	X	4	1	8	<b>TPCM_BAM_TotalNumberOfPackets (Total Number Of Packets)</b>		1	0	0 - 255	counts	7)
		4	1	8	<b>TPCM_END_TotalNumberOfPackets (Total Number Of Packets)</b>		1	0	0 - 255	counts	8)
		4	1	8	<b>TPCM_RTS_TotalNumberOfPackets (Total Number Of Packets)</b>		1	0	0 - 255	counts	9)
		5	1	8	<b>TPCM_RTS_MaximumNumberOfPackets (Maximum Number Of Packets)</b>		1	0	0 - 255	counts	10)
		6	1	24	<b>TPCM_ABO_PGNumber (Parameter Group Number Of The Packeted Message)</b>		1	0	0 - 16777215	PGN	11)
	X	6	1	24	<b>TPCM_BAM_PGNumber (Parameter Group Number Of The Packeted Message)</b>		1	0	0 - 16777215	PGN	12)
		6	1	24	<b>TPCM_CTS_PGNumber (Parameter Group Number Of The Packeted Message)</b>		1	0	0 - 16777215	PGN	13)
		6	1	24	<b>TPCM_END_PGNumber (Parameter Group Number Of The Packeted Message)</b>		1	0	0 - 16777215	PGN	14)
		6	1	24	<b>TPCM_RTS_PGNumber (Parameter Group Number Of The Packeted Message)</b>		1	0	0 - 16777215	PGN	15)



Note 1) (If multiplexor = 0xFF)

Note 2) 9 to 1785 (2 bytes), zero to 8 and 1786 to 65535 not allowed. (If multiplexor = 0x20)

Note 3) 2 to 255 (1 byte), zero and 1 not allowed. This value shall be no larger than the value in byte 5 of the RTS message. (If multiplexor = 0x11)

Note 4) 9 to 1785 (2 bytes), zero to 8 and 1786 to 65535 not allowed. (If multiplexor = 0x13)

Note 5) 9 to 1785 (2 bytes), zero to 8 and 1786 to 65535 not allowed. (If multiplexor = 0x10)

Note 6) 1 to 255 (1 byte), zero not allowed. (If multiplexor = 0x11)

Note 7) 2 to 255 (1 byte), zero and 1 not allowed. (If multiplexor = 0x20)

Note 8) 2 to 255 (1 byte), zero and 1 not allowed. (If multiplexor = 0x13)

Note 9) 2 to 255 (1 byte), zero and 1 not allowed. (If multiplexor = 0x10)

Note 10) 2 to 255 (1 byte), zero through 1 are not allowed. 0xFF no limits exists. (If multiplexor = 0x10)

Note 11) Byte 6=LSB, Byte 7= Mid, Byte 8=MSB. (If multiplexor = 0xFF)

Note 12) Byte 6=LSB, Byte 7= Mid, Byte 8=MSB. (If multiplexor = 0x20)

Note 13) Byte 6=LSB, Byte 7= Mid, Byte 8=MSB. (If multiplexor = 0x11)

Note 14) Byte 6=LSB, Byte 7= Mid, Byte 8=MSB. (If multiplexor = 0x13)

Note 15) Byte 6=LSB, Byte 7= Mid, Byte 8=MSB. (If multiplexor = 0x10)

## 2.4.2.5 TP\_DT (Transport Protocol - Data Transfer) - E -> FF

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/proprietary
18EBFF00	50	200	00EB00	6	On Request	0	0		00	FF	Std

See J1939-21 for details.

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	8	SequenceNumber (Sequence Number)		1	0	0 - 255	count	
	X	2	1	8	Byte1 (Data Transfer Byte1)		1	0	0 - 255		
	X	3	1	8	Byte2 (Data Transfer Byte2)		1	0	0 - 255		
	X	4	1	8	Byte3 (Data Transfer Byte3)		1	0	0 - 255		
	X	5	1	8	Byte4 (Data Transfer Byte3)		1	0	0 - 255		
	X	6	1	8	Byte5 (Data Transfer Byte5)		1	0	0 - 255		
	X	7	1	8	Byte6 (Data Transfer Byte6)		1	0	0 - 255		
	X	8	1	8	Byte7 (Data Transfer Byte3)		1	0	0 - 255		

## 2.4.3 Received messages: PDU2

### 2.4.3.1 AIR1 (Air Supply Pressure) - APS

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/proprietary
18FEAE30	1000	1000	00FEAE	6	Cyclic	0	0	AE	30		Std

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	8	<b>PneumaticSupplyPress (Pneumatic Supply Pressure)</b>		8	0	0 - 2000	kPa	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	2	1	8	<b>ParkingTrailerAirPressure (Parking and/or Trailer Air Pressure)</b>		8	0	0 - 2000	kPa	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	3	1	8	<b>ServiceBrakeAirPressure1 (Service Brake Air Pressure, Circuit1)</b>		8	0	0 - 2000	kPa	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	4	1	8	<b>ServiceBrakeAirPressure2 (Service Brake Air Pressure, Circuit2)</b>		8	0	0 - 2000	kPa	1)
	X				Error	0xFE					
	X				NotAvailable	0xFF					
		5	1	8	<b>AuxiliarySupplyPressure (Auxiliary Equipment Supply Pressure)</b>		8	0	0 - 2000	kPa	
					Error	0xFE					
					NotAvailable	0xFF					
		6	1	8	<b>AirSuspensionSupplyPress (Air Suspension Supply Pressure)</b>		8	0	0 - 2000	kPa	
					Error	0xFE					
					NotAvailable	0xFF					
	X	7	1	2	<b>AirCompressorStatus (Air Compressor Status)</b>		1	0	0 - 3		
	X				CompressorNotActive	0x00					
	X				CompressorActive	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
		8	1	8	<b>PowertrainCircuitSupplyPressure (Powertrain Circuit Supply Pressure)</b>		8	0	0 - 2000	kPa	
					Error	0xFE					
					NotAvailable	0xFF					

Note 1) Rear Circuit



**2.4.3.2 AlarmStatusProprietary (AlarmStatusProprietary) - AL**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18FFB41D	1000	1000	00FFB4	6	Cyclic	0	0	B4	1D		Prop



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S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	4	<b>AlarmStatus (Alarm Status)</b>		1	0	0 - 15		
	X				AlarmUnset	0x00					
	X				AlarmSet	0x01					
	X				AlarmTriggered	0x02					
	X				SilentAlarmTriggered	0x03					
	X				AlarmSetPerimeter	0x04					
	X				FerryMode	0x05					
	X				AlarmUnsetWithXPDR-Failed	0x06					
	X				AlarmUnsetWithXPDR-Succeeded	0x07					
	X				WorkAlert	0x08					
	X				AlarmTest	0x09					
	X				AlarmPassiveSet	0x0A					
	X				Reserved	0x0E					
	X				TakeNoAction	0x0F					
	X	1	5	4	<b>TrailerAlarmStatus (Trailer Alarm Status)</b>		1	0	0 - 15		
	X				TrailerAlarmUnset	0x00					
	X				TrailerAlarmSet	0x01					
	X				TrailerAlarmTriggered	0x02					
	X				TrailerAlarmSetParameter	0x03					
	X				TrailerFerryMode	0x04					
	X				AlarmTest	0x05					
	X				Reserved	0x0E					
	X				TakeNoAction	0x0F					
	X	2	1	8	<b>ReasonForActivation (Reason For Activation)</b>		1	0	0 - 255		
	X				No Activation	0x00					
	X				Driver Door Open	0x10					
	X				Passenger Door Open	0x11					
	X				Battery Box Opened	0x12					
	X				Battery Box Short Circuit	0x13					
	X				Luggage Box Open	0x14					
	X				Bonnet / Front Grille Open	0x15					
	X				Bonnet / Front Grille Short Circuit	0x16					
	X				Roof-hatch opened	0x17					
	X				Extra Switch 1 Open	0x20					
	X				Extra Switch 1 Short Circuit	0x21					
	X				Extra Switch 2 Open	0x22					
	X				Extra Switch 2 Short Circuit	0x23					
	X				Panic Switch Activated	0x24					
	X				Driver Door Unlocked	0x30					
	X				Passenger Door Unlocked	0x31					
	X				Cargo Door Unlocked	0x32					
	X				Main Power supply (30) lost	0x3F					
	X				Tilt Sensor (cab tilted)	0x40					
	X				MMS Cab Detection	0x41					
	X				MMS Cab Disconnected	0x42					
	X				MMS Body Detection	0x43					
	X				MMS Body Disconnected	0x44					
	X				BBS Disconnected	0x45					
	X				BBS Communication Error	0x46					



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X				Ignition 15	0x50					
X				Panic Remote Control	0x51					
X				Power Up (was alarm before reset)	0x52					
X				CAN-message from another ECU (GSM module etc.)	0x53					
X				Reserved	0xFE					
X				TakeNoAction	0xFF					
X	3	1	2	<b>CargoDoors (Cargo Doors)</b>		1	0	0 - 3		
X				Cargo Doors Not Opened	0x00					
X				Cargo Doors Opened	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
X	3	3	2	<b>DriverDoors (Driver Door)</b>		1	0	0 - 3		
X				Driver Door Not Opened	0x00					
X				Driver Door Opened	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
X	3	5	2	<b>PassengerDoors (Passenger Door)</b>		1	0	0 - 3		
X				Passenger Door Not Opened	0x00					
X				Passenger Door Opened	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
X	4	1	4	<b>AlarmStatusWhenAlarmTriggered (Alarm Status When Alarm Triggered)</b>		1	0	0 - 15		
X				AlarmUnset	0x00					
X				AlarmSet	0x01					
X				AlarmSetParameter	0x04					
X				FerryMode	0x05					
X				AlarmUnsetWithXPDR-Failed	0x06					
X				AlarmUnsetWithXPDR-Succeeded	0x07					
X				WorkAlert	0x08					
X				Reserved	0x0E					
X				TakeNoAction	0x0F					

**2.4.3.3 AmbientConditions (Ambient Conditions) - BCI**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/proprietary
18FEF5E6	1000	1000	00FEF5	6	Cyclic	0	0	F5	E6		Std

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	8	<b>BarometricPressure (Barometric Pressure)</b>		0.5	0	0 - 125	kPa	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	2	1	16	<b>CabInteriorTemperature (Cab Interior Temperature)</b>		0.03125	-273	-273 - 1734.96875	deg	
	X				Error	0xFE00					
	X				NotAvailable	0xFF00					
	X	4	1	16	<b>AmbientAirTemperature (Ambient Air Temperature)</b>		0.03125	-273	-273 - 1734.96875	deg	
	X				Error	0xFE00					
	X				NotAvailable	0xFF00					
	X	6	1	8	<b>AirInletTemperature (Air Inlet Temperature)</b>		1	-40	-40 - 210	deg	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	7	1	16	<b>RoadSurfaceTemperature (Road Surface Temperature)</b>		0.03125	-273	-273 - 1735	deg	
	X				Error	0xFE00					
	X				NotAvailable	0xFF00					

**2.4.3.4 AmbientConditions (Ambient Conditions) - K**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/proprietary
18FEF527	1000	1000	00FEF5	6	Cyclic	0	0	F5	27		Std

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	8	<b>BarometricPressure (Barometric Pressure)</b>		0.5	0	0 - 125	kPa	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	2	1	16	<b>CabInteriorTemperature (Cab Interior Temperature)</b>		0.03125	-273	-273 - 1734.96875	deg	
	X				Error	0xFE00					
	X				NotAvailable	0xFF00					
	X	4	1	16	<b>AmbientAirTemperature (Ambient Air Temperature)</b>		0.03125	-273	-273 - 1734.96875	deg	
	X				Error	0xFE00					
	X				NotAvailable	0xFF00					
		6	1	8	<b>AirInletTemperature (Air Inlet Temperature)</b>		1	-40	-40 - 210	deg	
					Error	0xFE					
					NotAvailable	0xFF					
		7	1	16	<b>RoadSurfaceTemperature (Road Surface Temperature)</b>		0.03125	-273	-273 - 1735	deg	
					Error	0xFE00					
					NotAvailable	0xFF00					

**2.4.3.5 ASC1 (Air Suspension Control 1) - F**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
0CFE5A2F	100	100	00FE5A	3	Cyclic	0	0	5A	2F		Std



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S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	4	<b>NominalLevelFrontAxle (Nominal Level Front Axle)</b>		1	0	0 - 15		
	X				LevelNotSpecified	0x00					
	X				NormalLevel1	0x01					
	X				NormalLevel2	0x02					
	X				NormalLevel3	0x03					
	X				PresetLevel	0x04					
	X				CustomerLevel	0x05					
	X				UpperLevel	0x06					
	X				LowerLevel	0x07					
	X				StopLevelChange	0x08					
	X				Raising	0x09					
	X				Lowering	0x0A					
	X				Error	0x0E					
	X				NotAvailable	0x0F					
	X	1	5	4	<b>NominalLevelRearAxle (Nominal Level Rear Axle)</b>		1	0	0 - 15		
	X				LevelNotSpecified	0x00					
	X				NormalLevel1	0x01					
	X				NormalLevel2	0x02					
	X				NormalLevel3	0x03					
	X				PresetLevel	0x04					
	X				CustomerLevel	0x05					
	X				UpperLevel	0x06					
	X				LowerLevel	0x07					
	X				StopLevelChange	0x08					
	X				Raising	0x09					
	X				Lowering	0x0A					
	X				Error	0x0E					
	X				NotAvailable	0x0F					
	X	2	1	2	<b>BelowNominalLevelFrontAxle (Below Nominal Level Front Axle)</b>		1	0	0 - 3		
	X				NotBelow	0x00					
	X				Below	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	2	3	2	<b>BelowNominalLevelRearAxle (Below Nominal Level Rear Axle)</b>		1	0	0 - 3		
	X				NotBelow	0x00					
	X				Below	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	2	5	2	<b>AboveNominalLevelFrontAxle (Above Nominal Level Front Axle)</b>		1	0	0 - 3		
	X				NotAbove	0x00					
	X				Above	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	2	7	2	<b>AboveNominalLevelRearAxle (Above Nominal Level Rear Axle)</b>		1	0	0 - 3		
	X				NotAbove	0x00					
	X				Above	0x01					



X				Error	0x02					
X				NotAvailable	0x03					
X	3	1	2	<b>LoweringControlModeFrontAxle (Lowering Control Mode Front Axle)</b>		1	0	0 - 3		
X				LoweringNotActive	0x00					
X				LoweringActive	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
X	3	3	2	<b>LoweringControlModeRearAxle (Lowering Control Mode Rear Axle)</b>		1	0	0 - 3		
X				LoweringNotActive	0x00					
X				LoweringActive	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
X	3	5	2	<b>LiftingControlModeFrontAxle (Lifting Control Mode Front Axle)</b>		1	0	0 - 3		
X				LiftingNotActive	0x00					
X				LiftingActive	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
X	3	7	2	<b>LiftingControlModeRearAxle (Lifting Control Mode Rear Axle)</b>		1	0	0 - 3		
X				LiftingNotActive	0x00					
X				LiftingActive	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
X	4	1	4	<b>KneelingInformation (Kneeling Information)</b>		1	0	0 - 15		
X				KneelingNotActive	0x00					
X				KneelingActive	0x01					
X				KneelingLevelReached	0x02					
X				LiftingActive	0x03					
X				KneelingAborted	0x04					
X				Error	0x0E					
X				NotAvailable	0x0F					
X	4	5	4	<b>LevelControlMode (Level Control Mode)</b>		1	0	0 - 15		
X				NormalOperation	0x00					
X				TractionHelp(LoadTransfer)	0x01					
X				LoadFixing	0x02					
X				PressureRatio1	0x03					
X				PressureRatio2	0x04					
X				OptimumTraction1	0x05					
X				OptimumTraction2	0x06					
X				TractionHelp(Reduce)	0x07					
X				ExhaustingBellowFunction	0x08					
X				AirSuspensionControlProhibited	0x09					
X				AutomaticAirSuspensionControlProhibited	0x0A					
X				ForceToBumperLevelInEffect	0x0B					
X				Error	0x0E					
X				NotAvailable	0x0F					
X	5	1	2	<b>SecurityDevice (Security Device)</b>		1	0	0 - 3		
X				NotActive	0x00					
X				Active	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
X	5	3	2	<b>VehicleMotionInhibit (Vehicle Motion Inhibit)</b>		1	0	0 - 3		
X				VehicleMayBeMoved	0x00					





## External CAN Communication Specification

X				VehicleMotionIsInhibited	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
X	5	5	2	<b>DoorRelease (Door Release)</b>		1	0	0 - 3		
X				DoorsMayNotBeOpened	0x00					
X				DoorsMayBeOpened	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
X	5	7	2	<b>LiftAxlePosition1 (Lift Axle 1 Position)</b>		1	0	0 - 3		
X				LiftAxlePosDown_TagAxleLaden	0x00					
X				LiftAxlePosUp_TagAxleUnladen	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
X	6	1	2	<b>ActLevelFrontAxleInBumperRange (Front Axle In Bumper Range)</b>		1	0	0 - 3		
X				ActualLevelAboveBumperRange	0x00					
X				ActualLevelWithinBumperRange	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
X	6	3	2	<b>ActLevelRearAxleInBumperRange (Rear Axle In Bumper Range)</b>		1	0	0 - 3		
X				ActualLevelAboveBumperRange	0x00					
X				ActualLevelWithinBumperRange	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
X	6	7	2	<b>LiftAxlePosition2 (Lift Axle 2 Position)</b>		1	0	0 - 3		
X				LiftAxlePosDown_TagAxleLaden	0x00					
X				LiftAxlePosUp_TagAxleUnladen	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
X	7	1	2	<b>SuspensionRemoteControl_1 (Suspension Remote Control 1)</b>		1	0	0 - 3		
X				NotActive	0x00					
X				Active	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
X	7	3	2	<b>SuspensionRemoteControl_2 (Suspension Remote Control 2)</b>		1	0	0 - 3		
X				NotActive	0x00					
X				Active	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
X	7	5	2	<b>AllowLevelCntrDuringBrkSt (Allow Level Control During Braking Status)</b>		1	0	0 - 3		
X				Inactive	0x00					
X				Active	0x01					
X				Reserved	0x02					
X				Don'tCare/TakeNoAction	0x03					
X	7	7	2	<b>SpeedDependantLevelCntrSta (Speed Dependant Level Control Status)</b>		1	0	0 - 3		
X				Inactive	0x00					
X				Active	0x01					
X				Reserved	0x02					
X				Don'tCare/TakeNoAction	0x03					
X	8	1	4	<b>ControlRefusalInformation (Suspension Control Refusal Information)</b>		1	0	0 - 15		
X				ActualRequestNotRefused	0x00					



X				AxleLoadLimitReached(LoadTransfer)	0x01					
X				WouldExceedLoadLimit(TagAxle)	0x02					
X				BogieDifferentialNotLocked	0x03					
X				AboveSpeedLimit	0x04					
X				BelowSpeedLimit	0x05					
X				GeneralRejectReqDenied	0x06					
X				RequestedLevelNotAvailable	0x07					
X				Error	0x0E					
X				NotAvailable	0x0F					
X	8	5	4	<b>MemoryLevel (Memory Level)</b>		1	0	0 - 0		
X				NoMemoryLevel	0x00					
X				MemoryLevel1Selected	0x01					
X				MemoryLevel2Selected	0x02					
X				MemoryLevel3Selected	0x03					
X				MemoryLevel4Selected	0x04					
X				MemoryLevel5Selected	0x05					
X				Reserved	0x06					
X				Reserved	0x07					
X				Reserved	0x08					
X				MemoryLevel1Stored	0x09					
X				MemoryLevel2Stored	0x0A					
X				MemoryLevel3Stored	0x0B					
X				MemoryLevel4Stored	0x0C					
X				MemoryLevel5Stored	0x0D					
X				Error	0x0E					
X				NotAvailable	0x0F					

**2.4.3.6 ASC1 (Air Suspension Control 1) - SX**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
0CFE5A40	100	100	00FE5A	3	Cyclic	0	0	5A	40		Std



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S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
		1	1	4	<b>NominalLevelFrontAxle (Nominal Level Front Axle)</b>		1	0	0 - 15		
					LevelNotSpecified	0x00					
					NormalLevel1	0x01					
					NormalLevel2	0x02					
					NormalLevel3	0x03					
					PresetLevel	0x04					
					CustomerLevel	0x05					
					UpperLevel	0x06					
					LowerLevel	0x07					
					StopLevelChange	0x08					
					Raising	0x09					
					Lowering	0x0A					
					Error	0x0E					
					NotAvailable	0x0F					
	X	1	5	4	<b>NominalLevelRearAxle (Nominal Level Rear Axle)</b>		1	0	0 - 15		
	X				LevelNotSpecified	0x00					
	X				NormalLevel1	0x01					
	X				NormalLevel2	0x02					
	X				NormalLevel3	0x03					
	X				PresetLevel	0x04					
	X				CustomerLevel	0x05					
	X				UpperLevel	0x06					
	X				LowerLevel	0x07					
	X				StopLevelChange	0x08					
	X				Raising	0x09					
	X				Lowering	0x0A					
	X				Error	0x0E					
	X				NotAvailable	0x0F					
		2	1	2	<b>BelowNominalLevelFrontAxle (Below Nominal Level Front Axle)</b>		1	0	0 - 3		
					NotBelow	0x00					
					Below	0x01					
					Error	0x02					
					NotAvailable	0x03					
	X	2	3	2	<b>BelowNominalLevelRearAxle (Below Nominal Level Rear Axle)</b>		1	0	0 - 3		
	X				NotBelow	0x00					
	X				Below	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
		2	5	2	<b>AboveNominalLevelFrontAxle (Above Nominal Level Front Axle)</b>		1	0	0 - 3		
					NotAbove	0x00					
					Above	0x01					
					Error	0x02					
					NotAvailable	0x03					
	X	2	7	2	<b>AboveNominalLevelRearAxle (Above Nominal Level Rear Axle)</b>		1	0	0 - 3		
	X				NotAbove	0x00					
	X				Above	0x01					

X				Error	0x02					
X				NotAvailable	0x03					
	3	1	2	<b>LoweringControlModeFrontAxle (Lowering Control Mode Front Axle)</b>		1	0	0 - 3		
				LoweringNotActive	0x00					
				LoweringActive	0x01					
				Error	0x02					
				NotAvailable	0x03					
X	3	3	2	<b>LoweringControlModeRearAxle (Lowering Control Mode Rear Axle)</b>		1	0	0 - 3		
X				LoweringNotActive	0x00					
X				LoweringActive	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
	3	5	2	<b>LiftingControlModeFrontAxle (Lifting Control Mode Front Axle)</b>		1	0	0 - 3		
				LiftingNotActive	0x00					
				LiftingActive	0x01					
				Error	0x02					
				NotAvailable	0x03					
X	3	7	2	<b>LiftingControlModeRearAxle (Lifting Control Mode Rear Axle)</b>		1	0	0 - 3		
X				LiftingNotActive	0x00					
X				LiftingActive	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
X	4	1	4	<b>KneelingInformation (Kneeling Information)</b>		1	0	0 - 15		
X				KneelingNotActive	0x00					
X				KneelingActive	0x01					
X				KneelingLevelReached	0x02					
X				LiftingActive	0x03					
X				KneelingAborted	0x04					
X				Error	0x0E					
X				NotAvailable	0x0F					
X	4	5	4	<b>LevelControlMode (Level Control Mode)</b>		1	0	0 - 15		
X				NormalOperation	0x00					
X				TractionHelp(LoadTransfer)	0x01					
X				LoadFixing	0x02					
X				PressureRatio1	0x03					
X				PressureRatio2	0x04					
X				OptimumTraction1	0x05					
X				OptimumTraction2	0x06					
X				TractionHelp(Reduce)	0x07					
X				ExhaustingBellowFunction	0x08					
X				AirSuspensionControlProhibited	0x09					
X				AutomaticAirSuspensionControlProhibited	0x0A					
X				ForceToBumperLevelInEffect	0x0B					
X				Error	0x0E					
X				NotAvailable	0x0F					
X	5	1	2	<b>SecurityDevice (Security Device)</b>		1	0	0 - 3		
X				NotActive	0x00					
X				Active	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
	5	3	2	<b>VehicleMotionInhibit (Vehicle Motion Inhibit)</b>		1	0	0 - 3		
				VehicleMayBeMoved	0x00					



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					VehicleMotionIsInhibited	0x01						
					Error	0x02						
					NotAvailable	0x03						
	X	5	5	2	<b>DoorRelease (Door Release)</b>		1	0	0 - 3			
	X				DoorsMayNotBeOpened	0x00						
	X				DoorsMayBeOpened	0x01						
	X				Error	0x02						
	X				NotAvailable	0x03						
		5	7	2	<b>LiftAxlePosition1 (Lift Axle 1 Position)</b>		1	0	0 - 3			
					LiftAxlePosDown_TagAxleLaden	0x00						
					LiftAxlePosUp_TagAxleUnladen	0x01						
					Error	0x02						
					NotAvailable	0x03						
		6	1	2	<b>ActLevelFrontAxleInBumperRange (Front Axle In Bumper Range)</b>		1	0	0 - 3			
					ActualLevelAboveBumperRange	0x00						
					ActualLevelWithinBumperRange	0x01						
					Error	0x02						
					NotAvailable	0x03						
		6	3	2	<b>ActLevelRearAxleInBumperRange (Rear Axle In Bumper Range)</b>		1	0	0 - 3			
					ActualLevelAboveBumperRange	0x00						
					ActualLevelWithinBumperRange	0x01						
					Error	0x02						
					NotAvailable	0x03						
		6	7	2	<b>LiftAxlePosition2 (Lift Axle 2 Position)</b>		1	0	0 - 3			
					LiftAxlePosDown_TagAxleLaden	0x00						
					LiftAxlePosUp_TagAxleUnladen	0x01						
					Error	0x02						
					NotAvailable	0x03						
		7	1	2	<b>SuspensionRemoteControl_1 (Suspension Remote Control 1)</b>		1	0	0 - 3			
					NotActive	0x00						
					Active	0x01						
					Error	0x02						
					NotAvailable	0x03						
		7	3	2	<b>SuspensionRemoteControl_2 (Suspension Remote Control 2)</b>		1	0	0 - 3			
					NotActive	0x00						
					Active	0x01						
					Error	0x02						
					NotAvailable	0x03						
	X	7	5	2	<b>AllowLevelCntrDuringBrkSt (Allow Level Control During Braking Status)</b>		1	0	0 - 3			
	X				Inactive	0x00						
	X				Active	0x01						
	X				Reserved	0x02						
	X				Don'tCare/TakeNoAction	0x03						
	X	7	7	2	<b>SpeedDependantLevelCntrSta (Speed Dependant Level Control Status)</b>		1	0	0 - 3			
	X				Inactive	0x00						
	X				Active	0x01						
	X				Reserved	0x02						
	X				Don'tCare/TakeNoAction	0x03						
	X	8	1	4	<b>ControlRefusalInformation (Suspension Control Refusal Information)</b>		1	0	0 - 15			
	X				ActualRequestNotRefused	0x00						



X				AxleLoadLimitReached(LoadTransfer)	0x01					
X				WouldExceedLoadLimit(TagAxle)	0x02					
X				BogieDifferentialNotLocked	0x03					
X				AboveSpeedLimit	0x04					
X				BelowSpeedLimit	0x05					
X				GeneralRejectReqDenied	0x06					
X				RequestedLevelNotAvailable	0x07					
X				Error	0x0E					
X				NotAvailable	0x0F					
	8	5	4	<b>MemoryLevel (Memory Level)</b>		1	0	0 - 0		
				NoMemoryLevel	0x00					
				MemoryLevel1Selected	0x01					
				MemoryLevel2Selected	0x02					
				MemoryLevel3Selected	0x03					
				MemoryLevel4Selected	0x04					
				MemoryLevel5Selected	0x05					
				Reserved	0x06					
				Reserved	0x07					
				Reserved	0x08					
				MemoryLevel1Stored	0x09					
				MemoryLevel2Stored	0x0A					
				MemoryLevel3Stored	0x0B					
				MemoryLevel4Stored	0x0C					
				MemoryLevel5Stored	0x0D					
				Error	0x0E					
				NotAvailable	0x0F					

**2.4.3.7 ASC3 (Air Suspension Control 3) - F**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/proprietary
18FE592F	100	100	00FE59	6	Cyclic	0	0	59	2F		Std

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	16	<b>RelativeLevelFrontAxleLeft (Relative Level Front Axle Left)</b>		0.1	-3200	-3200 - 3225.5	mm	
	X				Error	0xFE00					
	X				NotAvailable	0xFF00					
	X	3	1	16	<b>RelativeLevelFrontAxleRight (Relative Level Front Axle Right)</b>		0.1	-3200	-3200 - 3225.5	mm	
	X				Error	0xFE00					
	X				NotAvailable	0xFF00					
	X	5	1	16	<b>RelativeLevelRearAxleLeft (Relative Level Rear Axle Left)</b>		0.1	-3200	-3200 - 3225.5	mm	
	X				Error	0xFE00					
	X				NotAvailable	0xFF00					
	X	7	1	16	<b>RelativeLevelRearAxleRight (Relative Level Rear Axle Right)</b>		0.1	-3200	-3200 - 3225.5	mm	
	X				Error	0xFE00					
	X				NotAvailable	0xFF00					



**2.4.3.8 ASC3 (Air Suspension Control 3) - SX**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/proprietary
18FE5940	100	100	00FE59	6	Cyclic	0	0	59	40		Std

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
		1	1	16	<b>RelativeLevelFrontAxleLeft (Relative Level Front Axle Left)</b>		0.1	-3200	-3200 - 3225.5	mm	
					Error	0xFE00					
					NotAvailable	0xFF00					
		3	1	16	<b>RelativeLevelFrontAxleRight (Relative Level Front Axle Right)</b>		0.1	-3200	-3200 - 3225.5	mm	
					Error	0xFE00					
					NotAvailable	0xFF00					
	X	5	1	16	<b>RelativeLevelRearAxleLeft (Relative Level Rear Axle Left)</b>		0.1	-3200	-3200 - 3225.5	mm	
	X				Error	0xFE00					
	X				NotAvailable	0xFF00					
	X	7	1	16	<b>RelativeLevelRearAxleRight (Relative Level Rear Axle Right)</b>		0.1	-3200	-3200 - 3225.5	mm	
	X				Error	0xFE00					
	X				NotAvailable	0xFF00					

## 2.4.3.9 CabInformationProprietary1 (Cab Information Proprietary 1) - ICL

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/proprietary
18FF9617	100	100	00FF96	6	Cyclic	0	0	96	17		Prop

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
		1	1	2	<b>DriverDoorStatus (Driver Door Status)</b>		1	0	0 - 3		
					DoorClosed	0x00					
					DoorOpen	0x01					
					Error	0x02					
					NotAvailable	0x03					
	X	1	3	2	<b>SeatbeltReminder (Seatbelt Reminder)</b>		1	0	0 - 3		
	X				NoSeatbeltReminder	0x00					
	X				SeatbeltReminder	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
		1	5	2	<b>DriverEvaluationReset ()</b>		1	0	0 - 3		
					NoReset	0x00					
					Reset	0x01					
					Error	0x02					
					NotAvailable	0x03					
		1	7	2	<b>AmbientLightState (Ambient Light State)</b>		1.0	0.0	0 - 3		
					DayTime	0x00					
					NightTime	0x01					
					Error	0x02					
					NotAvailable	0x03					
		2	1	16	<b>AmbientLightDriverSide (AmbientLightDriverSide)</b>		1.9837	0	0 - 128986.1251	lux	
					Error	0xFE00					
					NotAvailable	0xFFFF					

**2.4.3.10    CooGeneralInfo (CooGeneralInfo) - K**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
0CFFB027	10	200	00FFB0	3	Cyclic	0	0	B0	27		Prop

Normal update rate is 200ms, but 10ms if change of state in 'Brake Light Request' or 'Immobliser Lamp Activation'.



## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	2	<b>BrakeLightRequest (Brake Light Request)</b>		1	0	0 - 3		
	X				BrakeLightNotRequested	0x00					
	X				BrakeLightRequested	0x01					
	X				Reserved	0x02					
	X				NotAvailable	0x03					
	X	1	3	2	<b>Charge61 (Charge 61)</b>		1	0	0 - 3		
	X				GeneratorNotCharging	0x00					
	X				GeneratorCharging	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	1	5	4	<b>PowerCoordinatorEngineState (Power Coordinator Engine State)</b>		1	0	0 - 15		
	X				Off	0x00					
	X				On	0x01					
	X				Pause	0x02					
	X				Starting	0x03					
	X				Stopping	0x04					
	X				Reserved	0x05					
	X				Reserved	0x06					
	X				Reserved	0x07					
	X				Reserved	0x08					
	X				Reserved	0x09					
	X				Reserved	0x0A					
	X				Reserved	0x0B					
	X				Reserved	0x0C					
	X				Reserved	0x0D					
	X				Error	0x0E					
	X				NotAvailable	0x0F					
	X	2	1	2	<b>TrailerABSDetection (Trailer ABS Detection)</b>		1	0	0 - 3		
	X				NoTrailerABSDetected	0x00					
	X				TrailerABSDetected	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	2	3	2	<b>TrailerABSFullyOperational (Trailer ABS Fully Operational)</b>		1	0	0 - 3		
	X				TrailerABSNotFullyOperational	0x00					
	X				TrailerABSFullyOperational	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
		2	5	2	<b>PerfModeChangeRq (Performance Mode Change Request)</b>		1	0	0 - 3		
					No Change	0x00					
					Pending Mode Change	0x01					
					Error	0x02					
					NotAvailable	0x03					
	X	2	7	2	<b>UnappliedParkingBrakeWarning (Unapplied Parking Brake Warning)</b>		1	0	0 - 3		
	X				ParkingBrakePostShutOffWarningNotRequested	0x00					

X				ParkingBrakePostShutOffWarningRequested	0x01					
X				Reserved	0x02					
X				TakeNoAction	0x03					
	3	1	8	<b>RecommendedGearChoice (Recommended Gear Choice)</b>		1	0	0 - 255		
				Neutral	0x00					
				NoGearRecommended	0xE0					
				Park position	0xFB					
				Error	0xFE					
				NotAvailable	0xFF					
	4	1	2	<b>ActivateBusStopBrake (Activate Bus Stop Brake)</b>		1	0	0 - 3		
				ActivateBusStopBrakeNotRequested	0x00					
				ActivateBusStopBrakeRequested	0x01					
				Error	0x02					
				NotAvailable	0x03					
X	4	3	2	<b>EngineStopSwitch (Engine Stop Switch)</b>		1	0	0 - 3		
X				EngineStopSwitchNotActivated	0x00					
X				EngineStopSwitchActivated	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
	4	5	2	<b>ImmobiliserLampActivation (Immobiliser Lamp Activation)</b>		1	0	0 - 3		
				NoImmobiliserLampActivationRequest	0x00					
				ImmobiliserLampActivationRequest	0x01					
				Error	0x02					
				NotAvailable	0x03					
X	4	7	2	<b>_08barParkingbrake (0.8bar Parking Brake)</b>		1	0	0 - 3		
X				0.8barParkingBrakeNotSet	0x00					
X				0.8barParkingBrakeSet	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
X	5	1	2	<b>EngineStart (EngineStart)</b>		1	0	0 - 3	-	
X				Off	0x00					
X				On	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
	5	3	4	<b>PerfModeCurrentMode (Performance Mode Current Mode)</b>		1	0	0 - 15		
				PerfModeStandard	0x00					
				PerfModeEconomy	0x01					
				PerfModePower	0x02					
				PerfModeOffroad	0x03					
				Reserved	0x04					
				Reserved	0x05					
				Reserved	0x06					
				Reserved	0x07					
				Reserved	0x08					
				Reserved	0x09					
				Reserved	0x0A					
				Reserved	0x0B					
				Reserved	0x0C					
				Reserved	0x0D					
				Error	0x0E					
				NotAvailable	0x0F					
X	5	7	2	<b>GearboxInReverse (Gearbox In Reverse)</b>		1	0	0 - 3		



	X				GearboxNotInReverse	0x00					
	X				GearboxInReverse	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					

**2.4.3.11      CooGeneralInfo2 (CooGeneralInfo2) - K**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
0CFFAF27	1000	1000	00FFAF	3	Cyclic	0	0	AF	27		Prop



## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	2	<b>SeatbeltReminder (Seatbelt Reminder)</b>		1	0	0 - 3		
	X				NoSeatbeltReminder	0x00					
	X				SeatbeltReminder	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	1	3	2	<b>FailureInSteeringCircuit1 (Failure In Steering Circuit 1)</b>		1	0	0 - 3		
	X				NoFailureInSteering	0x00					
	X				FailureInSteering	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	1	5	2	<b>FailureInSteeringCircuit2 (Failure In Steering Circuit 2)</b>		1	0	0 - 3		
	X				NoFailureInSteering	0x00					
	X				FailureInSteering	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	1	7	2	<b>FailureInSteeredTagAxle (Failure In Steered Tag Axle)</b>		1	0	0 - 3		
	X				NoFailureInSteering	0x00					
	X				FailureInSteering	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	2	1	2	<b>LowEngineCoolantWaterLevel (Low Engine Coolant Water Level)</b>		1	0	0 - 3		
	X				NotLowEngineCoolantWaterLevel	0x00					
	X				LowEngineCoolantWaterLevel	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	2	3	2	<b>ClutchOverload (Clutch Overload)</b>		1	0	0 - 3		
	X				ClutchNotOverloaded	0x00					
	X				ClutchOverloaded	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
		2	5	2	<b>_5thWheellock (5th Wheel Lock)</b>		1	0	0 - 3		
					5thWheelNotLocked	0x00					
					5thWheelLocked	0x01					
					Error	0x02					
					NotAvailable	0x03					
		2	7	2	<b>LowLevelFuelWarning (Low Level Fuel Warning)</b>		1	0	0 - 3		
					NotActive	0x00					
					Active	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		3	1	3	<b>WaterInFuelSens (Water In Fuel Sensing)</b>		1	0	0 - 7		
					No water in fuel	0x00					
					Water in fuel warning	0x01					





				Error	0x06					
				NotAvailable	0x07					
	3	7	2	<b>ADASHorizonOutOfSync ()</b>		1	0	0 - 3		
				NotHorizonOutOfSync	0x00					
				HorizonOutOfSync	0x01					
				Error	0x02					
				NotApplicable	0x03					
	4	1	4	<b>VehicleBlockingStatus (VehicleBlockingStatus)</b>		1	0	0 - 0		
				Unblocked	0x00					
				SpeedSupervision	0x01					
				BlockEngine	0x02					
				Blocked	0x03					
				Error	0x0E					
				NotAvailable	0x0F					
	4	5	2	<b>VehicleSpeedImplausible (Vehicle Speed Implausible)</b>		1	0	0 - 3		
				SpeedPlausible	0x00					
				SpeedImplausible	0x01					
				Error	0x02					
				NotAvailable	0x03					
	4	7	2	<b>PowerSteeringOilLevelWarning (Power Steering Oil Level Warning)</b>		0	0	0 - 3	-	
				Disabled	0x00					
				Enabled	0x01					
				Error	0x02					
				NotAvailable	0x03					
	5	1	4	<b>ADASFunctionErrorFlag (ADASFunctionErrorFlag)</b>		1	0	0 - 15		
				No error detected	0x00					
				ADAS map error detected	0x01					
				Function error detected	0x02					
				Error	0x0E					
				Not available	0x0F					
	5	5	2	<b>SteeringCircuitFailure (Steering Circuit Failure)</b>		1.0	0.0	0 - 3		
				NotActive	0x00					
				Active	0x01					
				Error	0x02					
				NotAvailable	0x03					
	5	7	2	<b>SteeringSensorMalfunction (Steering Sensor Malfunction)</b>		1.0	0.0	0 - 3		
				NotActive	0x00					
				Active	0x01					
				Error	0x02					
				NotAvailable	0x03					
	6	1	2	<b>RoadSlopeRecordingAllowed (Road Slope Recording Allowed)</b>		1.0	0.0	0 - 3		
				DoNotRecordRoadSlope	0x00					
				RecordRoadSlope	0x01					
				Error	0x02					
				Not Available	0x03					
	6	3	2	<b>EHSPumpRunningState (EHS Pump Running State)</b>		1.0	0.0	0 - 3	-	
				PumpIsNotRunning	0x00					
				PumpIsRunning	0x01					
				Error	0x02					
				NotAvailable	0x03					

**2.4.3.12 CrashOccured (CrashOccured) - AB**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18FFFD64	1000	1000	00FFFD	6	Cyclic	0	0	FD	64		Prop

Message sends UTC time, taken from the message Time/Date.



## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	2	<b>CrashOccured (Crash Occured)</b>		1	0	0 - 3		
	X				No Crash occurred	0x00					
	X				Crash occurred	0x01					
	X				Reserved	0x02					
	X				TakeNoAction	0x03					
		1	3	2	<b>FrontalCrashOccured (Frontal Crash Occured)</b>		1	0	0 - 3		
					NoOccurance	0x00					
					HasOccured	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		1	5	2	<b>LeftRolloverCrashOccured (Left Rollover Crash Occured)</b>		1	0	0 - 3		
					NoOccurance	0x00					
					HasOccured	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		1	7	2	<b>RightRolloverCrashOccured (Right Rollover Crash Occured)</b>		1	0	0 - 3		
					NoOccurance	0x00					
					HasOccured	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		2	1	3	<b>ProbableImpactOccured (Probable Impact Occured)</b>		1.0	0	0 - 7		
					NoImpactOccured	0x00					
					Not Used	0x01					
					NearCrashOccured	0x02					
					Not Used	0x03					
					Not Used	0x04					
					Not Used	0x05					
					Reserved	0x06					
					TakeNoAction	0x07					
		2	4	2	<b>RolloverEventOccured_ToBeRemoved (Rollover Event Occured_ToBeRemoved)</b>		1.0	0	0 - 3		
		2	6	3	<b>CrashSeverity_ToBeRemoved (Crash Severity_ToBeRemoved)</b>		1.0	0	0 - 7		
	X	3	1	8	<b>Seconds (Seconds)</b>		0.25	0	0 - 62.5	s	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	4	1	8	<b>Minutes (Minutes)</b>		1	0	0 - 250	mins	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	5	1	8	<b>Hours (Hours)</b>		1	0	0 - 250	hr	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	6	1	8	<b>Month (Month)</b>		1	0	0 - 250	months	



## External CAN Communication Specification

	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	7	1	8	<b>Day (Day)</b>		0.25	0	0 - 62.5	days	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	8	1	8	<b>Year (Year)</b>		1	1985	1985 - 2235	years	
	X				Error	0xFE					
	X				NotAvailable	0xFF					

**2.4.3.13 CruiseControlVehSpeed (Cruise Control/Vehicle Speed) - E**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18FEF100	100	100	00FEF1	6	Cyclic	0	0	F1	00		Std



## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
		1	1	2	<b>TwoSpeedAxleSwitch (Two Speed Axle Switch)</b>		1	0	0 - 3		
					LowSpeedRange	0x00					
					HighSpeedRange	0x01					
					Error	0x02					
					NotAvailable	0x03					
	X	1	3	2	<b>ParkingBrakeSwitch (Parking Brake Switch)</b>		1	0	0 - 3		1)
	X				ParkingBrakeNotSet	0x00					
	X				ParkingBrakeSet	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
		1	5	2	<b>CruiseCtrlPauseSwitch (Cruise Control Pause Switch)</b>		1	0	0 - 3		
					Off	0x00					
					On	0x01					
					ErrorIndicator	0x02					
					TakeNoAction	0x03					
		1	7	2	<b>ParkBrakeReleaseInhibitRequest ()</b>		1.0	0	0 - 3		
					ParkBrakeReleaseIsNotInhibited	0x00					
					ParkBrakeReleaseIsInhibited	0x01					
					Error	0x02					
					Unavailable	0x03					
		2	1	16	<b>WheelBasedVehicleSpeed (Wheel Based Vehicle Speed)</b>		0.00390625	0	0 - 250.99609375	km/h	
					Error	0xFE00					
					NotAvailable	0xFFFF					
		4	1	2	<b>CruiseCtrlActive (Cruise Control Active)</b>		1	0	0 - 3		
					CruiseControlSwitchedOff	0x00					
					CruiseControlSwitchedOn	0x01					
					Error	0x02					
					NotAvailable	0x03					
		4	3	2	<b>CruiseCtrlEnableSwitch (Cruise Control Enable Switch)</b>		1	0	0 - 3		
					CruiseControlDisabled	0x00					
					CruiseControlEnabled	0x01					
					Error	0x02					
					NotAvailable	0x03					
	X	4	5	2	<b>BrakeSwitch (Brake Switch)</b>		1	0	0 - 3		
	X				BrakePedalReleased	0x00					
	X				BrakePedalDepressed	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
		4	7	2	<b>ClutchSwitch (Clutch Switch)</b>		1	0	0 - 3		
					ClutchPedalReleased	0x00					
					ClutchPedalDepressed	0x01					
					Error	0x02					
					NotAvailable	0x03					



## External CAN Communication Specification

		5	1	2	<b>CruiseCtrlSetSwitch (Cruise Control Set Switch)</b>		1	0	0 - 3		
					CruiseControlActivatorNotInPosition-Set	0x00					
					CruiseControlActivatorInPosition-Set	0x01					
					Error	0x02					
					NotAvailable	0x03					
		5	3	2	<b>CruiseCtrlCoastSwitch (Cruise Control Coast (Decelerate) Switch)</b>		1	0	0 - 3		
					CruiseControlActivatorNotInPosition-Coast	0x00					
					CruiseControlActivatorInPosition-Coast	0x01					
					Error	0x02					
					NotAvailable	0x03					
		5	5	2	<b>CruiseCtrlResumeSwitch (Cruise Control Resume Switch)</b>		1	0	0 - 3		
					CruiseControlActivatorNotInPosition-Resume	0x00					
					CruiseControlActivatorInPosition-Resume	0x01					
					Error	0x02					
					NotAvailable	0x03					
		5	7	2	<b>CruiseCtrlAccelerateSwitch (Cruise Control Accelerate Switch)</b>		1	0	0 - 3		
					CruiseControlActivatorNotInPosition-Accelerate	0x00					
					CruiseControlActivatorInPosition-Accelerate	0x01					
					Error	0x02					
					NotAvailable	0x03					
		6	1	8	<b>CruiseCtrlSetSpeed (Cruise Control Set Speed)</b>		1	0	0 - 250	km/h	
					Error	0xFE					
					NotAvailable	0xFF					
		7	1	5	<b>PTOState (PTO State)</b>		1	0	0 - 31		
					Off/Disabled	0x00					
					Hold	0x01					
					RemoteHold	0x02					
					Standby	0x03					
					RemoteStandby	0x04					
					Set	0x05					
					Decelerate/Coast	0x06					
					Resume	0x07					
					Accelerate	0x08					
					AccelerateOverride	0x09					
					PreprogrammedSetSpeed1	0x0A					
					PreprogrammedSetSpeed2	0x0B					
					PreprogrammedSetSpeed3	0x0C					
					PreprogrammedSetSpeed4	0x0D					
					PreprogrammedSetSpeed5	0x0E					
					PreprogrammedSetSpeed6	0x0F					
					PreprogrammedSetSpeed7	0x10					
					PreprogrammedSetSpeed8	0x11					
					NotAvailable	0x1F					
		7	6	3	<b>CruiseCtrlState (Cruise Control States)</b>		1	0	0 - 7		
					Off/Disabled	0x00					
					Hold	0x01					
					Accelerate	0x02					
					Decelerate/Coast	0x03					
					Resume	0x04					
					Set	0x05					
					AcceleratorOverride	0x06					



					NotAvailable	0x07					
		8	1	2	<b>IdleIncrementSwitch (Idle Increment Switch)</b>		1	0	0 - 3		
					Off	0x00					
					On	0x01					
					Error	0x02					
					NotAvailable	0x03					
		8	3	2	<b>IdleDecrementSwitch (Idle Decrement Switch)</b>		1	0	0 - 3		
					Off	0x00					
					On	0x01					
					Error	0x02					
					NotAvailable	0x03					
		8	5	2	<b>EngineTestModeSwitch (Engine Test Mode Switch)</b>		1	0	0 - 3		
					Off	0x00					
					On	0x01					
					Error	0x02					
					NotAvailable	0x03					
		8	7	2	<b>EngineShutdownOverrideSwitch (Engine Shutdown Override Switch)</b>		1	0	0 - 3		
					Off	0x00					
					On	0x01					
					Error	0x02					
					NotAvailable	0x03					

Note 1) Information from a pressure switch in the parking brake lever. 'Parking brake not set' send with pressure over 6 bar. Values 2 or 3 disables the VDC function.





### 2.4.3.14 CUVInformation (CUVInformation) - V

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/proprietary
18FFB11E	20	1000	00FFB1	6	On Change	0	0	B1	1E		Prop

The message shall be transmitted every 1000ms, and on change of state in any of the parameters but not faster than 20ms. It was formerly known as 'Lights proprietary'. It is used as heartbeat for the ICL.



## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	2	<b>MainBeamIntended (Main Beam Intended)</b>		1	0	0 - 3		
	X				Off	0x00					
	X				On	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	1	3	2	<b>DippedBeamIntended (Dipped Beam Intended)</b>		1	0	0 - 3		
	X				Off	0x00					
	X				On	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	1	5	2	<b>DirectionIndicatorRightIntended (Direction Indicator Lamp Right Intended)</b>		1	0	0 - 3		
	X				Off	0x00					
	X				On	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	1	7	2	<b>DirectionIndicatorLeftIntended (Direction Indicator Lamp Left Intended)</b>		1	0	0 - 3		
	X				Off	0x00					
	X				On	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	2	1	2	<b>FrontFogLampIntended (Front Fog Lamp Intended)</b>		1	0	0 - 3		
	X				Off	0x00					
	X				On	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	2	3	2	<b>RearFogLightsIntended (Rear Fog Lamp Intended)</b>		1	0	0 - 3		
	X				Off	0x00					
	X				On	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	2	5	2	<b>ReverseLampIntended (Reverse Lamp Intended)</b>		1	0	0 - 3		
	X				Off	0x00					
	X				On	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	2	7	2	<b>StopLampIntended (Stop Lamp Intended)</b>		1	0	0 - 3		
	X				Off	0x00					
	X				On	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	3	1	2	<b>WipersIntended (Wiper Intended)</b>		1	0	0 - 3		
	X				Off	0x00					
	X				On	0x01					



X				Error	0x02					
X				NotAvailable	0x03					
X	3	3	2	<b>HeadLampFailure (Head Lamp Failure)</b>		1	0	0 - 3		
X				NoHeadLampFailure	0x00					
X				HeadLampFailure	0x01					
X				Reserved	0x02					
X				TakeNoAction	0x03					
X	3	5	2	<b>DirIndLampStatusTruckLeft (Direction Indicator Lamp Status Truck Left)</b>		1	0	0 - 3		
X				Off	0x00					
X				On	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
X	3	7	2	<b>DirIndLampStatusTruckRight (Direction Indicator Lamp Status Truck Right)</b>		1	0	0 - 3		
X				Off	0x00					
X				On	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
X	4	1	2	<b>DirIndLampStatusTrailerLeft (Direction Indicator Lamp Status Trailer Left)</b>		1	0	0 - 3		
X				Off	0x00					
X				On	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
X	4	3	2	<b>DirIndLampStatusTrailerRight (Direction Indicator Lamp Status Trailer Right)</b>		1	0	0 - 3		
X				Off	0x00					
X				On	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
X	4	5	2	<b>DirectionIndicatorLeverStatus (Direction Indicator Lever Status)</b>		1	0	0 - 3		1)
X				Direction indicator left activated	0x00					
X				Direction indicator right activated	0x01					
X				Reserved	0x02					
X				TakeNoAction	0x03					
X	4	7	2	<b>HornSwitchState (Horn Switch State)</b>		1	0	0 - 3		
X				Off	0x00					
X				On	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
X	5	1	2	<b>DRLIntended (DRL Intended)</b>		1	0	0 - 3		
X				Off	0x00					
X				On	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
	5	3	2	<b>DaytimeLightMode (Daytime Light Mode)</b>		1.0	0.0	0 - 3		
				NotActive	0x00					
				Active	0x01					
				Error	0x02					
				NotAvailable	0x03					
	5	5	2	<b>ActiveLightsWarningRequest (Request for Active Lights Warning)</b>		1.0	0.0	0 - 3		
				Deactivate	0x00					
				Activate	0x01					

					Reserved	0x02					
					TakeNoAction	0x03					
		5	7	2	<b>HazardWarningSignalStatus (Hazard Warning Signal Status)</b>		1.0	0.0	0 - 3	-	
					NotActive	0x00					
					Active	0x01					
					Error	0x02					
					NotAvailable	0x03					
	X	7	1	2	<b>WorklightToggleSwitch (Worklight Toggle Switch)</b>		1	0	0 - 3		2)
	X				Off	0x00					
	X				On	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	7	3	2	<b>WorklightOutputStatus (Worklight Output Status)</b>		1	0	0 - 3		3)
	X				Off	0x00					
	X				On	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	7	5	2	<b>FiftyEight (58)</b>		1	0	0 - 3		4)
	X				Off	0x00					
	X				On	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	7	7	2	<b>TrailerDetection (Trailer Detection)</b>		1	0	0 - 3		5)
	X				TrailerNotDetected	0x00					
	X				TrailerDetected	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	8	1	2	<b>AmberWarningLampStatus (Amber Warning Lamp Status)</b>		1	0	0 - 3		
	X				LampOff	0x00					
	X				LampOn	0x01					
	X				Reserved	0x02					
	X				TakeNoAction	0x03					
	X	8	3	2	<b>WasherFluidLevelStatus (Washer Fluid Level)</b>		1	0	0 - 3		
	X				LevelHigh	0x00					
	X				LevelLow	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	8	5	2	<b>ParkingLights (Parking Lights)</b>		1	0	0 - 3		
	X				SwitchNotInParkingLightsPosition	0x00					
	X				SwitchInParkingLightsPosition	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	8	7	2	<b>DrivingLights (Driving Lights)</b>		1	0	0 - 3		
	X				SwitchNotInDrivingLightsPosition	0x00					
	X				SwitchInDrivingLightsPosition	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					

Note 1) Value 3: Sent if the lever is normal position or if an error is detected.

Note 2) Indicates if the switch for the worklight activation is pressed

Note 3) Indicates if the worklight is on or off

Note 4) The 58-relay controls for example the position lamps.

Note 5) Values 2 or 3 forbids full VDC function.



### 2.4.3.15 DashDisplay (Dash Display) - K

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/proprietary
18FEFC27	1000	1000	00FEFC	6	Cyclic	0	0	FC	27		Std

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
		1	1	8	<b>WasherFluidLevel (Washer Fluid Level)</b>		0.4	0	0 - 100	%	
					Error	0xFE					
					NotAvailable	0xFF					
	X	2	1	8	<b>FuelLevel (Fuel Level)</b>		0.4	0	0 - 100	%	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
		3	1	8	<b>FuelFilterDiffPressure (Fuel Filter Differential Pressure)</b>		2	0	0 - 500	kPa	
					Error	0xFE					
					NotAvailable	0xFF					
		4	1	8	<b>EngineOilFilterDiffPressure (Engine Oil Filter Differential Pressure)</b>		0.5	0	0 - 125	kPa	
					Error	0xFE					
					NotAvailable	0xFF					
		5	1	16	<b>CargoAmbientTemperature (Cargo Ambient Temperature)</b>		0.03125	-273	-273 - 1735	deg	
					Error	0xFE00					
					NotAvailable	0xFF00					
		7	1	8	<b>FuelLevel_2 (Fuel Level 2)</b>		0.4	0	0 - 100	%	
					Error	0xFE					
					NotAvailable	0xFF					

**2.4.3.16 DLN2 (DLN2) - E**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
0CFF8100	100	100	00FF81	3	Cyclic	0	0	81	00		Prop

Note! this is a multiplex message. NCG: Message discontinued in N8



## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	8	<b>VersionDLN2Message (Version Of DLN2 Message)</b>		1	0	0 - 250		1)
	X				Version 0x0D (Trucks & Buses)	0x0D					
	X				Version 0xA1 (Engines)	0xA1					
	X	2	1	2	<b>ReqHeatOfExhaustGases_0x0D ()</b>		1	0	0 - 0		
	X				False	0x00					
	X				True	0x01					
	X				Error	0x02					
	X				NotAvaliable	0x03					
		2	1	2	<b>ReqHeatOfExhaustGases_0xA1 ()</b>		1	0	0 - 0		
					False	0x00					
					True	0x01					
					Error	0x02					
					NotAvaliable	0x03					
		2	3	6	<b>EngineOilPressureAbnormalTimeRemaini ng_0x0D (EngineOilPressureAbnormalTimeRemain ing_0x0D)</b>		0	0	0 - 63	h	
					Error	0x3E					
					NotAvaliable	0x3F					
		3	1	2	<b>LowEngineOilLevel_0x0D (Low Engine Oil Level)</b>		1	0	0 - 3		2)
					NotLowEngineOilLevel	0x00					
					LowEngineOilLevel	0x01					
					Error	0x02					
					NotAvaliable	0x03					
		3	1	2	<b>LowEngineOilLevel_0xA1 (Low Engine Oil Level)</b>		1	0	0 - 3		3)
					NotLowEngineOilLevel	0x00					
					LowEngineOilLevel	0x01					
					Error	0x02					
					NotAvaliable	0x03					
		3	3	2	<b>HighEngineOilLevel_0x0D (High Engine Oil Level)</b>		1	0	0 - 3		4)
					NotHighEngineOilLevel	0x00					
					HighEngineOilLevel	0x01					
					Error	0x02					
					NotAvaliable	0x03					
		3	3	2	<b>HighEngineOilLevel_0xA1 (High Engine Oil Level)</b>		1	0	0 - 3		5)
					NotHighEngineOilLevel	0x00					
					HighEngineOilLevel	0x01					
					Error	0x02					
					NotAvaliable	0x03					
	X	3	5	2	<b>LowEngineOilPressure_0x0D (Low Engine Oil Pressure)</b>		1	0	0 - 3		6)
	X				NotLowEngineOilPressure	0x00					
	X				LowEngineOilPressure	0x01					
	X				Error	0x02					
	X				NotAvaliable	0x03					



		3	5	2	<b>LowEngineOilPressure_0xA1 (Low Engine Oil Pressure)</b>		1	0	0 - 3		7)
					NotLowEngineOilPressure	0x00					
					LowEngineOilPressure	0x01					
					Error	0x02					
					NotAvailable	0x03					
		3	7	2	<b>EngVehicleSpeedControlState_0x0D (Engine Vehicle Speed Control State)</b>		1	0	0 - 3		8)
					No vehicle speed request will be accepted	0x00					
					Any vehicle speed request will be accepted	0x01					
					Error	0x02					
					NotAvailable	0x03					
	X	4	1	2	<b>HighEngineCoolantTemp_0x0D (High Engine Coolant Temperature)</b>		1	0	0 - 3		9)
	X				NotHighEngineCoolantTemp	0x00					
	X				HighEngineCoolantTemp	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
		4	1	2	<b>HighEngineCoolantTemp_0xA1 (High Engine Coolant Temperature)</b>		1	0	0 - 3		10)
					NotHighEngineCoolantTemp	0x00					
					HighEngineCoolantTemp	0x01					
					Error	0x02					
					NotAvailable	0x03					
		4	3	2	<b>PowerLostDueToHighTemp_0x0D (Power Lost Due To High Temperature)</b>		1	0	0 - 3		11)
					NoPowerLostDueToHighTemp	0x00					
					PowerLostDueToHighTemp	0x01					
					Error	0x02					
					NotAvailable	0x03					
		4	3	2	<b>PowerLostDueToHighTemp_0xA1 (Power Lost Due To High Temperature)</b>		1	0	0 - 3		12)
					NoPowerLostDueToHighTemp	0x00					
					PowerLostDueToHighTemp	0x01					
					Error	0x02					
					NotAvailable	0x03					
		4	5	2	<b>EngineStopLimitExceeded_0xA1 (Engine Stop Limit Exceeded)</b>		1	0	0 - 3		13)
					Limit not exceeded	0x00					
					Limit is exceeded	0x01					
					Error	0x02					
					NotAvailable	0x03					
	X	4	5	2	<b>LowUreaLevel_0x0D (Low Urea Level)</b>		1	0	0 - 3		14)
	X				NoLowUreaLevel	0x00					
	X				LowUreaLevel	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
		4	7	2	<b>GeneratorMalfunction_0x0D (GeneratorMalfunction)</b>		1	0	0 - 0		
					Disabled	0x00					
					Enabled	0x01					
					Error	0x02					
					NotAvailable	0x03					
		4	7	2	<b>LowUreaLevel_0xA1 (Low Urea Level)</b>		1	0	0 - 3		15)
					NoLowUreaLevel	0x00					
					LowUreaLevel	0x01					
					Error	0x02					
					NotAvailable	0x03					



## External CAN Communication Specification

	X	5	1	2	<b>Charge61_0x0D (Charge 61)</b>		1	0	0 - 3		16)
	X				GeneratorNotCharging	0x00					
	X				GeneratorCharging	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
		5	1	2	<b>Charge61_0xA1 (Charge 61)</b>		1	0	0 - 3		17)
					GeneratorNotCharging	0x00					
					GeneratorCharging	0x01					
					Error	0x02					
					NotAvailable	0x03					
	X	5	3	3	<b>EngineControlMode_0x0D (Engine Control Mode)</b>		1	0	0 - 7		18)
	X				NotActive	0x00					
	X				HandThrottleActive(mode0)	0x01					
	X				LimitedHandThrottleActive(mode1)	0x02					
	X				RaisedIdlingSpeedActive(mode2)	0x03					
	X				PredefinedEngineSpeedActive(mode3)	0x04					
	X				RemoteControlEngineSpeedActive(mode4)	0x05					
	X				NotDefined	0x06					
	X				NotAvailable	0x07					
		5	6	3	<b>EngineRunningState_0x0D (Engine Running State)</b>		1	0	0 - 7		19)
					Off	0x00					
					On	0x01					
					StartingMode	0x02					
					StoppingMode	0x03					
					Error	0x06					
					NotAvailable	0x07					
		6	1	2	<b>TestEngineLamp_0x0D (Test Engine Lamp)</b>		1	0	0 - 3		20)
					NotActivated	0x00					
					Activated	0x01					
					Error	0x02					
					NotAvailable	0x03					
		6	1	2	<b>TestEngineLamp_0xA1 (Test Engine Lamp)</b>		1	0	0 - 3		21)
					NotActivated	0x00					
					Activated	0x01					
					Error	0x02					
					NotAvailable	0x03					
	X	6	3	2	<b>ClutchOverload_0x0D (Clutch Overload)</b>		1	0	0 - 3		22)
	X				ClutchNotOverloaded	0x00					
	X				ClutchOverloaded	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
		6	3	2	<b>DiagnosticStatus_0xA1 (Diagnostic Status)</b>		1	0	0 - 3		23)
					TwinklingNotActive	0x00					
					TwinklingOfTwinkleCodeActive	0x01					
					DiagnosticButtonPressed	0x02					
					NotAvailable	0x03					
		6	5	4	<b>DPFRegenerationState_0x0D (DPF Regeneration State)</b>		1	0	0 - 0		24)
					ActivationNotNeededAlert	0x00					
					ManualActivationInhibited	0x01					
					ManualRegenerationInitialization	0x02					
					ManualRegenerationActive	0x03					

					ManualRegenerationCompleted	0x04					
					ManualRegenerationAborted	0x05					
					AutomaticRegenerationInhibited	0x06					
					AutomaticRegenerationInitialization	0x07					
					AutomaticRegenerationActive	0x08					
					AutomaticRegenerationCompleted	0x09					
					AutomaticRegenerationAborted	0x0A					
					Reserved	0x0B					
					Reserved	0x0C					
					Reserved	0x0D					
					Reserved	0x0E					
					Don'tCare	0x0F					
		6	5	2	<b>NewDTC_0xA1 (New DTC)</b>		1	0	0 - 0		25)
					Not Activated	0x00					
					Activated	0x01					
					Error	0x02					
					NotAvailable	0x03					
		7	1	8	<b>EngineEconomySpeedLowValue_0x0D (Engine Economy Speed Low Value)</b>		25	0	0 - 6250	rpm	26)
					Error	0xFE					
					NotAvailable	0xFF					
		7	1	8	<b>SingleSpeedDroopValue_0xA1 (Single Speed Droop Value)</b>		0.1	0	0 - 0	%	27)
					Error	0xFE					
					NotAvailable	0xFF					
		8	1	8	<b>EngineEconomySpeedHighValue_0x0D (Engine Economy Speed High Value)</b>		25	0	0 - 6250	rpm	28)
					Error	0xFE					
					NotAvailable	0xFF					

Note 1) Multiplexor for DLN2

Note 2) Only valid if version 0x0D of DLN2

Note 3) Only valid if version 0xA1 of DLN2 (Scania Engines).

Note 4) Only valid if version 0x0D of DLN2

Note 5) Only valid if version 0xA1 of DLN2 (Scania Engines).

Note 6) Only valid if version 0x0D of DLN2

Note 7) Only valid if version 0xA1 of DLN2 (Scania Engines).

Note 8) Only valid if version 0x0D of DLN2

Note 9) Only valid if version 0x0D of DLN2

Note 10) Only valid if version 0xA1 of DLN2 (Scania Engines).

Note 11) Only valid if version 0x0D of DLN2

Note 12) Only valid if version 0xA1 of DLN2 (Scania Engines).

Note 13) Only valid if version 0xA1 of DLN2 (Scania Engines).

Note 14) Only valid if version 0x0D of DLN2

Note 15) Only valid if version 0xA1 of DLN2 (Scania Engines).

Note 16) Only valid if version 0x0D of DLN2

Note 17) Only valid if version 0xA1 of DLN2 (Scania Engines).

Note 18) Only 0x0D. Set by following modes: 0x0 - DLN1::ISSW2=0x0 and DLN1::ISSW1=0x0 0x1 -

DLN1::ISSW2=0x0 and DLN1::ISSW1=0x1 0x2 - DLN1::ISSW2=0x1 and DLN1::ISSW1=0x0 0x3 -

DLN1::ISSW2=0x1 and DLN1::ISSW1=0x1 0x4 - TSCproprietary::OverrideControlMode=0x1

Note 19) In starting mode the engine is cranking, or the starter motor is cooling down in order to automatically retry a new crank. Only valid if version 0x0D of DLN2.

Note 20) Only valid if version 0x0D of DLN2

Note 21) Only valid if version 0xA1 of DLN2 (Scania Engines).

Note 22) Only valid if version 0x0D of DLN2

Note 23) Only valid if version 0xA1 of DLN2 (Scania Engines).

Note 24) ActivationNotNeededAlert should only be sent when a manual activation has been requested and activation is not currently needed. Only valid if version 0x0D of DLN2.

Note 25) Only valid if version 0xA1 of DLN2 (Scania Engines).

Note 26) Only valid if version 0x0D of DLN2

Note 27) Only valid if version 0xA1 of DLN2 (Scania Engines).

Note 28) Only valid if version 0x0D of DLN2

**2.4.3.17 DLN5 (DLN5) - K**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
0CFFA027	50	50	00FFA0	3	Cyclic	0	0	A0	27		Prop



## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
		1	1	2	<b>SplitLowSwitch (Split Low Switch)</b>		1	0	0 - 3		1)
					NotActive	0x00					
					Active	0x01					
					Error	0x02					
					NotAvailable	0x03					
	X	1	3	2	<b>RangeLowSwitch (Range Low Switch)</b>		1	0	0 - 3		2)
	X				NotActive	0x00					
	X				Active	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
		1	5	4	<b>RetarderLeverPosition (Retarder Lever Position)</b>		1	0	0 - 15		3)
					0	0x00					
					1	0x01					
					2	0x02					
					3	0x03					
					4	0x04					
					5	0x05					
					6	0x06					
					7	0x07					
					8	0x08					
					9	0x09					
					10	0x0A					
					11	0x0B					
					12	0x0C					
					13	0x0D					
					Error	0x0E					
					NotAvailable	0x0F					
		2	1	2	<b>AutomaticNeutralRequest (Automatic Neutral Request)</b>		1	0	0 - 3		
					AutomaticNeutralNotRequested	0x00					
					AutomaticNeutralRequested	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		2	3	2	<b>ExhaustBrakeFloorSwitch (Exhaust Brake - Floor Switch)</b>		1	0	0 - 3		
					SwitchNotActivated	0x00					
					SwitchActivated	0x01					
					Error	0x02					
					NotAvailable	0x03					
		2	5	2	<b>RetarderSpeedControlOffSwitch (Retarder Speed Control OffSwitch)</b>		1	0	0 - 3		4)
					ButtonNotPressed	0x00					
					ButtonPressed	0x01					
					Error	0x02					
					NotAvailable	0x03					
		2	7	2	<b>RetarderSpeedControlSetSwitch (Retarder Speed Control SetSwitch)</b>		1	0	0 - 3		5)
					ButtonNotPressed	0x00					
					ButtonPressed	0x01					



## External CAN Communication Specification

					Error	0x02					
					NotAvailable	0x03					
	X	3	1	8	<b>ClutchPedalPosition (Clutch Pedal Position)</b>		0.4	0	0 - 100	%	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
		4	1	8	<b>RetarderLeverPosition1 (Retarder Lever Position 1)</b>		0.4	0	0 - 100	%	
					Error	0xFE					
					NotAvailable	0xFF					
	X	5	1	2	<b>RetarderBrakeAssistSwitch (Retarder Brake Assist Switch)</b>		1	0	0 - 3		6)
	X				Off	0x00					
	X				On	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	5	3	2	<b>GearshiftReverseSwitch (Gearshift Reverse Switch)</b>		1	0	0 - 3		7)
	X				GearshiftLeverNotInReversePosition	0x00					
	X				GearshiftLeverInReversePosition	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	5	5	2	<b>GearshiftNeutralSwitch (Gearshift Neutral Switch)</b>		1	0	0 - 3		8)
	X				GearshiftLeverNotInNeutralPosition	0x00					
	X				GearshiftLeverInNeutralPosition	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	5	7	2	<b>GearshiftAutomaticSwitch (Gearshift Automatic Switch)</b>		1	0	0 - 3		9)
	X				GearshiftLeverNotInAutomaticPosition	0x00					
	X				GearshiftLeverInAutomaticPosition	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	6	1	2	<b>GearshiftManualSwitch (Gearshift Manual Switch)</b>		1	0	0 - 3		10)
	X				GearshiftLeverNotInManualPosition	0x00					
	X				GearshiftLeverInManualPosition	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
		6	3	2	<b>GearshiftUpSwitch (Gearshift Up Switch)</b>		1	0	0 - 3		11)
					GearshiftLeverNotInUpPosition	0x00					
					GearshiftLeverInUpPosition	0x01					
					Error	0x02					
					NotAvailable	0x03					
		6	5	2	<b>GearshiftDownSwitch (Gearshift Down Switch)</b>		1	0	0 - 3		12)
					GearshiftLeverNotInDownPosition	0x00					
					GearshiftLeverInDownPosition	0x01					
					Error	0x02					
					NotAvailable	0x03					
		6	7	2	<b>GearshiftModeSwitch (Gearshift Mode Switch)</b>		1	0	0 - 3		13)
					Off	0x00					
					On	0x01					
					Error	0x02					
					NotAvailable	0x03					
		7	1	2	<b>TorqueConverterLockupSwitch (Torque Converter Lockup Switch)</b>		1	0	0 - 3		



					ButtonNotPressed	0x00					
					ButtonPressed	0x01					
					Error	0x02					
					NotAvailable	0x03					
		7	3	2	<b>QuickHeatUp (Quick Heat Up)</b>		1	0	0 - 3		
					QuickHeatUpNotRequested	0x00					
					QuickHeatUpRequested	0x01					
					Error	0x02					
					NotAvailable	0x03					
		7	5	2	<b>TransRevGearShiftInhibitReq (Transmission Reverse Gear Shift Inhibit Request)</b>		1	0	0 - 3		
					Allow Reverse Gear Shift	0x00					
					Inhibit Reverse Gear Shift	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		7	7	2	<b>ClutchControlRequest (Clutch Control Request)</b>		1	0	0 - 3		
					ClutchControlNotRequested	0x00					
					ClutchControlRequested	0x01					
					Error	0x02					
					NotAvailable	0x03					
		8	1	2	<b>GearshiftAutoManSwitch (GearshiftAutoManSwitch)</b>		1	0	0 - 3		
					GearshiftAutoManNotPressed	0x00					
					GearshiftAutoManPressed	0x01					
					Error	0x02					
					NotAvailable	0x03					

Note 1) Only Sent with Scania manual gearbox or EST41 installed

Note 2) Only Sent with Scania manual gearbox or EST41 installed

Note 3) Only sent when retarder lever installed

Note 4) Only sent with scania hydraulic retarder installed

Note 5) Only sent with scania hydraulic retarder installed

Note 6) Only sent with scania hydraulic retarder installed

Note 7) Only sent with OPC installed

Note 8) Only sent with OPC installed

Note 9) Only sent with OPC installed

Note 10) Only sent with OPC installed

Note 11) Only sent with OPC installed

Note 12) Only sent with OPC installed

Note 13) Only sent with OPC installed



**2.4.3.18 DLN8 (DLN8) - E**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18FF8800	1000	1000	00FF88	6	Cyclic	0	0	88	00		Prop

NCG: Message discontinued in N8



## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	8	<b>CoolantWaterFlow (Coolant Water Flow)</b>		10	0	0 - 2500	L/min	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	2	1	8	<b>CoolingFanSpeed (Cooling Fan Speed)</b>		16	0	0 - 4000	rpm	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	3	1	16	<b>AppliedVehicleSpeedLimit_P (Applied Vehicle Speed Limit Proprietary)</b>		0.00390625	0	0 - 250.99609375	km/h	
	X				Error	0xFE00					
	X				NotAvailable	0xFFFF					
	X	5	1	6	<b>DpfRegenerationCountdownTimer (DPF Regeneration Countdown Timer)</b>		1	0	0 - 60	min	
	X				MoreThan60Minutes	0x3D					
	X				Error	0x3E					
	X				NotAvailable	0x3F					
	X	5	7	2	<b>OBDReactivationMode (Emission-OBD reactivation mode)</b>		1	0	0 - 3		
	X				NotActive	0x00					
	X				Active	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	6	1	3	<b>StarterMotorTempStatus ()</b>		1	0	0 - 7		
	X				StarterMotorNormalTemp	0x00					
	X				StarterMotorHighTemp	0x01					
	X				StarterMotorInhibitedDueToHighTemp	0x02					
	X				Reserved	0x06					
	X				TakeNoAction	0x07					
	X	6	4	4	<b>OBDInducementState (Emission-OBD inducement state)</b>		1	0	0 - 0		
	X				NoInducement	0x00					
	X				ActiveTorqueLimitDueToUreaLevel	0x01					
	X				ActiveSpeedLimitDueToUreaLevel	0x02					
	X				ActiveTorqueLimitDueToSCRFailure	0x03					
	X				ActiveSpeedLimitDueToSCRFailure	0x04					
	X				Error	0x0E					
	X				NotAvailable	0x0F					
	X	7	1	8	<b>TimeToSpeedLimiting (Time to speed limiting)</b>		1	0	0 - 250	hr	1)
	X				NoPendingSpeedLimit(Parameter Specific Indicator)	0xFB					
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	8	1	3	<b>UreaLevelIndState (Urea level inducement state)</b>		1	0	0 - 7		
	X				UreaLevelOk	0x00					
	X				LowUreaLevel	0x01					
	X				FillUpUrea	0x02					
	X				UreaTankEmpty	0x03					
	X				Error	0x06					



	X				NotAvailable	0x07					
	X	8	4	4	<b>OBDIIndFailureReason (Emission-OBD inducement failure reason)</b>		1	0	0 - 0		
	X				NoFailure	0x00					
	X				DosingError	0x01					
	X				UreaQuality	0x02					
	X				MonitorFailure	0x03					
	X				NoxFailure	0x04					
	X				Error	0x0E					
	X				NotAvailable	0x0F					

Note 1) Cause for time counting down to EuVI speed limiting inducement



### 2.4.3.19 DM1 (Diagnostic Message 1) - A

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18FECA0B	1000	1000	00FECA	6	Cyclic	0	0	CA	0B		Std

The length of the message varies depending on the number of active DTCs. The data length of the message will be at least 8 byte long, for more details see SAE J1939-73

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
		1	1	2	<b>ProtectLampStatus (Protect Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
	X	1	3	2	<b>AmberWarningLampStatus (Amber Warning Lamp Status)</b>		1	0	0 - 3		
	X				LampOff	0x00					
	X				LampOn	0x01					
	X				Reserved	0x02					
	X				TakeNoAction	0x03					
		1	5	2	<b>RedStopLampStatus (Red Stop Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		1	7	2	<b>MalfunctionIndicatorLampStatus (Malfunction Indicator Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		2	1	2	<b>FlashEngineProtectLamp (Flash Engine Protect Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	3	2	<b>FlashEngineAmberWarningLamp (Flash Engine Amber Warning Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	5	2	<b>FlashEngineRedStopLamp (Flash Engine Red Stop Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	7	2	<b>FlashEngineMalfuncIndicatorLamp (Flash Engine Malfunc Indicator Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		3	1	8	<b>SuspectParameterNumberLSB (Suspect Parameter Number LSB)</b>		1	0	0 - 255		1)
		4	1	8	<b>SuspectParameterNumberMiB (Suspect Parameter Number Mid Byte)</b>		1	0	0 - 255		2)

		5	1	5	<b>FailureModeIdentifier (Failure Mode Identifier)</b>		1	0	0 - 0		3)
					Above normal (most severe)	0x00					
					Below normal (most severe)	0x01					
					Data erratic	0x02					
					Voltage above normal	0x03					
					Voltage below normal	0x04					
					Current below normal	0x05					
					Current above normal	0x06					
					Mechanical system not responding	0x07					
					Abnormal frequency	0x08					
					Abnormal update rate	0x09					
					Abnormal rate of change	0x0A					
					Root cause not known	0x0B					
					Bad intelligent device	0x0C					
					Out of calibration	0x0D					
					Special instructions	0x0E					
					Above normal (least severe)	0x0F					
					Above normal (moderately severe)	0x10					
					Below normal (least severe)	0x11					
					Below normal (moderately severe)	0x12					
					Received network data in error	0x13					
					Data Drifted High	0x14					
					Data Drifted Low	0x15					
					NotAvailable	0x1F					
		5	6	3	<b>SuspectParameterNumberMS3bit (Suspect Parameter Number MS 3-bit)</b>		1	0	0 - 7		4)
		6	1	7	<b>OccurrenceCount (Occurrence Count)</b>		1	0	0 - 126		
					NotAvailable	0x7F					
		6	8	1	<b>SPNConversionMethod (SPN Conversion Method)</b>		1	0	0 - 1		
					Convert SPNs per the Version 4 definition in SAE J1939-73 chap 5.7.1.11	0x00					
					Convert SPNs per Version 1, 2 or 3 specified in SAE J1939-73 chap 5.7.1.11	0x01					

Note 1) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

Note 2) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

Note 3) Most significant at bit 5

Note 4) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!



### 2.4.3.20 DM1 (Diagnostic Message 1) - AB

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18FECA64	1000	1000	00FECA	6	Cyclic	0	0	CA	64		Std

The length of the message varies depending on the number of active DTCs. The data length of the message will be at least 8 byte long, for more details see SAE J1939-73

## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
		1	1	2	<b>ProtectLampStatus (Protect Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
	X	1	3	2	<b>AmberWarningLampStatus (Amber Warning Lamp Status)</b>		1	0	0 - 3		
	X				LampOff	0x00					
	X				LampOn	0x01					
	X				Reserved	0x02					
	X				TakeNoAction	0x03					
		1	5	2	<b>RedStopLampStatus (Red Stop Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		1	7	2	<b>MalfunctionIndicatorLampStatus (Malfunction Indicator Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		2	1	2	<b>FlashEngineProtectLamp (Flash Engine Protect Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	3	2	<b>FlashEngineAmberWarningLamp (Flash Engine Amber Warning Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	5	2	<b>FlashEngineRedStopLamp (Flash Engine Red Stop Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	7	2	<b>FlashEngineMalfuncIndicatorLamp (Flash Engine Malfunc Indicator Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		3	1	8	<b>SuspectParameterNumberLSB (Suspect Parameter Number LSB)</b>		1	0	0 - 255		1)
		4	1	8	<b>SuspectParameterNumberMiB (Suspect Parameter Number Mid Byte)</b>		1	0	0 - 255		2)





## External CAN Communication Specification

		5	1	5	<b>FailureModeIdentifier (Failure Mode Identifier)</b>		1	0	0 - 0		3)
					Above normal (most severe)	0x00					
					Below normal (most severe)	0x01					
					Data erratic	0x02					
					Voltage above normal	0x03					
					Voltage below normal	0x04					
					Current below normal	0x05					
					Current above normal	0x06					
					Mechanical system not responding	0x07					
					Abnormal frequency	0x08					
					Abnormal update rate	0x09					
					Abnormal rate of change	0x0A					
					Root cause not known	0x0B					
					Bad intelligent device	0x0C					
					Out of calibration	0x0D					
					Special instructions	0x0E					
					Above normal (least severe)	0x0F					
					Above normal (moderately severe)	0x10					
					Below normal (least severe)	0x11					
					Below normal (moderately severe)	0x12					
					Received network data in error	0x13					
					Data Drifted High	0x14					
					Data Drifted Low	0x15					
					NotAvailable	0x1F					
		5	6	3	<b>SuspectParameterNumberMS3bit (Suspect Parameter Number MS 3-bit)</b>		1	0	0 - 7		4)
		6	1	7	<b>OccurrenceCount (Occurrence Count)</b>		1	0	0 - 126		
					NotAvailable	0x7F					
		6	8	1	<b>SPNConversionMethod (SPN Conversion Method)</b>		1	0	0 - 1		
					Convert SPNs per the Version 4 definition in SAE J1939-73 chap 5.7.1.11	0x00					
					Convert SPNs per Version 1, 2 or 3 specified in SAE J1939-73 chap 5.7.1.11	0x01					

Note 1) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

Note 2) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

Note 3) Most significant at bit 5

Note 4) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!



### 2.4.3.21 DM1 (Diagnostic Message 1) - APS

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18FECA30	1000	1000	00FECA	6	Cyclic	0	0	CA	30		Std

The length of the message varies depending on the number of active DTCs. The data length of the message will be at least 8 byte long, for more details see SAE J1939-73

# External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
		1	1	2	<b>ProtectLampStatus (Protect Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
	X	1	3	2	<b>AmberWarningLampStatus (Amber Warning Lamp Status)</b>		1	0	0 - 3		
	X				LampOff	0x00					
	X				LampOn	0x01					
	X				Reserved	0x02					
	X				TakeNoAction	0x03					
		1	5	2	<b>RedStopLampStatus (Red Stop Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		1	7	2	<b>MalfunctionIndicatorLampStatus (Malfunction Indicator Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		2	1	2	<b>FlashEngineProtectLamp (Flash Engine Protect Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	3	2	<b>FlashEngineAmberWarningLamp (Flash Engine Amber Warning Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	5	2	<b>FlashEngineRedStopLamp (Flash Engine Red Stop Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	7	2	<b>FlashEngineMalfuncIndicatorLamp (Flash Engine Malfunc Indicator Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		3	1	8	<b>SuspectParameterNumberLSB (Suspect Parameter Number LSB)</b>		1	0	0 - 255		1)
		4	1	8	<b>SuspectParameterNumberMiB (Suspect Parameter Number Mid Byte)</b>		1	0	0 - 255		2)



## External CAN Communication Specification

		5	1	5	<b>FailureModeIdentifier (Failure Mode Identifier)</b>		1	0	0 - 0		3)
					Above normal (most severe)	0x00					
					Below normal (most severe)	0x01					
					Data erratic	0x02					
					Voltage above normal	0x03					
					Voltage below normal	0x04					
					Current below normal	0x05					
					Current above normal	0x06					
					Mechanical system not responding	0x07					
					Abnormal frequency	0x08					
					Abnormal update rate	0x09					
					Abnormal rate of change	0x0A					
					Root cause not known	0x0B					
					Bad intelligent device	0x0C					
					Out of calibration	0x0D					
					Special instructions	0x0E					
					Above normal (least severe)	0x0F					
					Above normal (moderately severe)	0x10					
					Below normal (least severe)	0x11					
					Below normal (moderately severe)	0x12					
					Received network data in error	0x13					
					Data Drifted High	0x14					
					Data Drifted Low	0x15					
					NotAvailable	0x1F					
		5	6	3	<b>SuspectParameterNumberMS3bit (Suspect Parameter Number MS 3-bit)</b>		1	0	0 - 7		4)
		6	1	7	<b>OccurrenceCount (Occurrence Count)</b>		1	0	0 - 126		
					NotAvailable	0x7F					
		6	8	1	<b>SPNConversionMethod (SPN Conversion Method)</b>		1	0	0 - 1		
					Convert SPNs per the Version 4 definition in SAE J1939-73 chap 5.7.1.11	0x00					
					Convert SPNs per Version 1, 2 or 3 specified in SAE J1939-73 chap 5.7.1.11	0x01					

Note 1) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

Note 2) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

Note 3) Most significant at bit 5

Note 4) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

**2.4.3.22 DM1 (Diagnostic Message 1) - ATA**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18FECA44	1000	1000	00FECA	6	Cyclic	0	0	CA	44		Std

The length of the message varies depending on the number of active DTCs. The data length of the message will be at least 8 byte long, for more details see SAE J1939-73

## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
		1	1	2	<b>ProtectLampStatus (Protect Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
	X	1	3	2	<b>AmberWarningLampStatus (Amber Warning Lamp Status)</b>		1	0	0 - 3		
	X				LampOff	0x00					
	X				LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		1	5	2	<b>RedStopLampStatus (Red Stop Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		1	7	2	<b>MalfunctionIndicatorLampStatus (Malfunction Indicator Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		2	1	2	<b>FlashEngineProtectLamp (Flash Engine Protect Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	3	2	<b>FlashEngineAmberWarningLamp (Flash Engine Amber Warning Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	5	2	<b>FlashEngineRedStopLamp (Flash Engine Red Stop Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	7	2	<b>FlashEngineMalfuncIndicatorLamp (Flash Engine Malfunc Indicator Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		3	1	8	<b>SuspectParameterNumberLSB (Suspect Parameter Number LSB)</b>		1	0	0 - 255		1)
		4	1	8	<b>SuspectParameterNumberMiB (Suspect Parameter Number Mid Byte)</b>		1	0	0 - 255		2)

		5	1	5	<b>FailureModeIdentifier (Failure Mode Identifier)</b>		1	0	0 - 0		3)
					Above normal (most severe)	0x00					
					Below normal (most severe)	0x01					
					Data erratic	0x02					
					Voltage above normal	0x03					
					Voltage below normal	0x04					
					Current below normal	0x05					
					Current above normal	0x06					
					Mechanical system not responding	0x07					
					Abnormal frequency	0x08					
					Abnormal update rate	0x09					
					Abnormal rate of change	0x0A					
					Root cause not known	0x0B					
					Bad intelligent device	0x0C					
					Out of calibration	0x0D					
					Special instructions	0x0E					
					Above normal (least severe)	0x0F					
					Above normal (moderately severe)	0x10					
					Below normal (least severe)	0x11					
					Below normal (moderately severe)	0x12					
					Received network data in error	0x13					
					Data Drifted High	0x14					
					Data Drifted Low	0x15					
					NotAvailable	0x1F					
		5	6	3	<b>SuspectParameterNumberMS3bit (Suspect Parameter Number MS 3-bit)</b>		1	0	0 - 7		4)
		6	1	7	<b>OccurrenceCount (Occurrence Count)</b>		1	0	0 - 126		
					NotAvailable	0x7F					
		6	8	1	<b>SPNConversionMethod (SPN Conversion Method)</b>		1	0	0 - 1		
					Convert SPNs per the Version 4 definition in SAE J1939-73 chap 5.7.1.11	0x00					
					Convert SPNs per Version 1, 2 or 3 specified in SAE J1939-73 chap 5.7.1.11	0x01					

Note 1) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

Note 2) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

Note 3) Most significant at bit 5

Note 4) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

**2.4.3.23 DM1 (Diagnostic Message 1) - AWD**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18FECA04	1000	1000	00FECA	6	Cyclic	0	0	CA	04		Std

The length of the message varies depending on the number of active DTCs. The data length of the message will be at least 8 byte long, for more details see SAE J1939-73



## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
		1	1	2	<b>ProtectLampStatus (Protect Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
	X	1	3	2	<b>AmberWarningLampStatus (Amber Warning Lamp Status)</b>		1	0	0 - 3		
	X				LampOff	0x00					
	X				LampOn	0x01					
	X				Reserved	0x02					
	X				TakeNoAction	0x03					
		1	5	2	<b>RedStopLampStatus (Red Stop Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		1	7	2	<b>MalfunctionIndicatorLampStatus (Malfunction Indicator Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		2	1	2	<b>FlashEngineProtectLamp (Flash Engine Protect Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	3	2	<b>FlashEngineAmberWarningLamp (Flash Engine Amber Warning Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	5	2	<b>FlashEngineRedStopLamp (Flash Engine Red Stop Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	7	2	<b>FlashEngineMalfuncIndicatorLamp (Flash Engine Malfunc Indicator Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		3	1	8	<b>SuspectParameterNumberLSB (Suspect Parameter Number LSB)</b>		1	0	0 - 255		1)
		4	1	8	<b>SuspectParameterNumberMiB (Suspect Parameter Number Mid Byte)</b>		1	0	0 - 255		2)



## External CAN Communication Specification

		5	1	5	<b>FailureModeIdentifier (Failure Mode Identifier)</b>		1	0	0 - 0		3)
					Above normal (most severe)	0x00					
					Below normal (most severe)	0x01					
					Data erratic	0x02					
					Voltage above normal	0x03					
					Voltage below normal	0x04					
					Current below normal	0x05					
					Current above normal	0x06					
					Mechanical system not responding	0x07					
					Abnormal frequency	0x08					
					Abnormal update rate	0x09					
					Abnormal rate of change	0x0A					
					Root cause not known	0x0B					
					Bad intelligent device	0x0C					
					Out of calibration	0x0D					
					Special instructions	0x0E					
					Above normal (least severe)	0x0F					
					Above normal (moderately severe)	0x10					
					Below normal (least severe)	0x11					
					Below normal (moderately severe)	0x12					
					Received network data in error	0x13					
					Data Drifted High	0x14					
					Data Drifted Low	0x15					
					NotAvailable	0x1F					
		5	6	3	<b>SuspectParameterNumberMS3bit (Suspect Parameter Number MS 3-bit)</b>		1	0	0 - 7		4)
		6	1	7	<b>OccurrenceCount (Occurrence Count)</b>		1	0	0 - 126		
					NotAvailable	0x7F					
		6	8	1	<b>SPNConversionMethod (SPN Conversion Method)</b>		1	0	0 - 1		
					Convert SPNs per the Version 4 definition in SAE J1939-73 chap 5.7.1.11	0x00					
					Convert SPNs per Version 1, 2 or 3 specified in SAE J1939-73 chap 5.7.1.11	0x01					

Note 1) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

Note 2) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

Note 3) Most significant at bit 5

Note 4) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!



### 2.4.3.24 DM1 (Diagnostic Message 1) - CV

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18FECA43	1000	1000	00FECA	6	Cyclic	0	0	CA	43		Std

The length of the message varies depending on the number of active DTCs. The data length of the message will be at least 8 byte long, for more details see SAE J1939-73

## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
		1	1	2	<b>ProtectLampStatus (Protect Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
	X	1	3	2	<b>AmberWarningLampStatus (Amber Warning Lamp Status)</b>		1	0	0 - 3		
	X				LampOff	0x00					
	X				LampOn	0x01					
	X				Reserved	0x02					
	X				TakeNoAction	0x03					
		1	5	2	<b>RedStopLampStatus (Red Stop Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		1	7	2	<b>MalfunctionIndicatorLampStatus (Malfunction Indicator Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		2	1	2	<b>FlashEngineProtectLamp (Flash Engine Protect Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	3	2	<b>FlashEngineAmberWarningLamp (Flash Engine Amber Warning Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	5	2	<b>FlashEngineRedStopLamp (Flash Engine Red Stop Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	7	2	<b>FlashEngineMalfuncIndicatorLamp (Flash Engine Malfunc Indicator Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		3	1	8	<b>SuspectParameterNumberLSB (Suspect Parameter Number LSB)</b>		1	0	0 - 255		1)
		4	1	8	<b>SuspectParameterNumberMiB (Suspect Parameter Number Mid Byte)</b>		1	0	0 - 255		2)

		5	1	5	<b>FailureModeIdentifier (Failure Mode Identifier)</b>		1	0	0 - 0		3)
					Above normal (most severe)	0x00					
					Below normal (most severe)	0x01					
					Data erratic	0x02					
					Voltage above normal	0x03					
					Voltage below normal	0x04					
					Current below normal	0x05					
					Current above normal	0x06					
					Mechanical system not responding	0x07					
					Abnormal frequency	0x08					
					Abnormal update rate	0x09					
					Abnormal rate of change	0x0A					
					Root cause not known	0x0B					
					Bad intelligent device	0x0C					
					Out of calibration	0x0D					
					Special instructions	0x0E					
					Above normal (least severe)	0x0F					
					Above normal (moderately severe)	0x10					
					Below normal (least severe)	0x11					
					Below normal (moderately severe)	0x12					
					Received network data in error	0x13					
					Data Drifted High	0x14					
					Data Drifted Low	0x15					
					NotAvailable	0x1F					
		5	6	3	<b>SuspectParameterNumberMS3bit (Suspect Parameter Number MS 3-bit)</b>		1	0	0 - 7		4)
		6	1	7	<b>OccurrenceCount (Occurrence Count)</b>		1	0	0 - 126		
					NotAvailable	0x7F					
		6	8	1	<b>SPNConversionMethod (SPN Conversion Method)</b>		1	0	0 - 1		
					Convert SPNs per the Version 4 definition in SAE J1939-73 chap 5.7.1.11	0x00					
					Convert SPNs per Version 1, 2 or 3 specified in SAE J1939-73 chap 5.7.1.11	0x01					

Note 1) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

Note 2) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

Note 3) Most significant at bit 5

Note 4) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!



### 2.4.3.25 DM1 (Diagnostic Message 1) - E

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18FECA00	1000	1000	00FECA	6	Cyclic	0	0	CA	00		Std

The length of the message varies depending on the number of active DTCs. The data length of the message will be at least 8 byte long, for more details see SAE J1939-73

## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
		1	1	2	<b>ProtectLampStatus (Protect Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
	X	1	3	2	<b>AmberWarningLampStatus (Amber Warning Lamp Status)</b>		1	0	0 - 3		
	X				LampOff	0x00					
	X				LampOn	0x01					
	X				Reserved	0x02					
	X				TakeNoAction	0x03					
		1	5	2	<b>RedStopLampStatus (Red Stop Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		1	7	2	<b>MalfunctionIndicatorLampStatus (Malfunction Indicator Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		2	1	2	<b>FlashEngineProtectLamp (Flash Engine Protect Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	3	2	<b>FlashEngineAmberWarningLamp (Flash Engine Amber Warning Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	5	2	<b>FlashEngineRedStopLamp (Flash Engine Red Stop Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	7	2	<b>FlashEngineMalfuncIndicatorLamp (Flash Engine Malfunc Indicator Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		3	1	8	<b>SuspectParameterNumberLSB (Suspect Parameter Number LSB)</b>		1	0	0 - 255		1)
		4	1	8	<b>SuspectParameterNumberMiB (Suspect Parameter Number Mid Byte)</b>		1	0	0 - 255		2)

		5	1	5	<b>FailureModeIdentifier (Failure Mode Identifier)</b>		1	0	0 - 0		3)
					Above normal (most severe)	0x00					
					Below normal (most severe)	0x01					
					Data erratic	0x02					
					Voltage above normal	0x03					
					Voltage below normal	0x04					
					Current below normal	0x05					
					Current above normal	0x06					
					Mechanical system not responding	0x07					
					Abnormal frequency	0x08					
					Abnormal update rate	0x09					
					Abnormal rate of change	0x0A					
					Root cause not known	0x0B					
					Bad intelligent device	0x0C					
					Out of calibration	0x0D					
					Special instructions	0x0E					
					Above normal (least severe)	0x0F					
					Above normal (moderately severe)	0x10					
					Below normal (least severe)	0x11					
					Below normal (moderately severe)	0x12					
					Received network data in error	0x13					
					Data Drifted High	0x14					
					Data Drifted Low	0x15					
					NotAvailable	0x1F					
		5	6	3	<b>SuspectParameterNumberMS3bit (Suspect Parameter Number MS 3-bit)</b>		1	0	0 - 7		4)
		6	1	7	<b>OccurrenceCount (Occurrence Count)</b>		1	0	0 - 126		
					NotAvailable	0x7F					
		6	8	1	<b>SPNConversionMethod (SPN Conversion Method)</b>		1	0	0 - 1		
					Convert SPNs per the Version 4 definition in SAE J1939-73 chap 5.7.1.11	0x00					
					Convert SPNs per Version 1, 2 or 3 specified in SAE J1939-73 chap 5.7.1.11	0x01					

Note 1) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

Note 2) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

Note 3) Most significant at bit 5

Note 4) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!



**2.4.3.26 DM1 (Diagnostic Message 1) - F**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18FECA2F	1000	1000	00FECA	6	Cyclic	0	0	CA	2F		Std

The length of the message varies depending on the number of active DTCs. The data length of the message will be at least 8 byte long, for more details see SAE J1939-73



## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
		1	1	2	<b>ProtectLampStatus (Protect Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
	X	1	3	2	<b>AmberWarningLampStatus (Amber Warning Lamp Status)</b>		1	0	0 - 3		
	X				LampOff	0x00					
	X				LampOn	0x01					
	X				Reserved	0x02					
	X				TakeNoAction	0x03					
		1	5	2	<b>RedStopLampStatus (Red Stop Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		1	7	2	<b>MalfunctionIndicatorLampStatus (Malfunction Indicator Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		2	1	2	<b>FlashEngineProtectLamp (Flash Engine Protect Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	3	2	<b>FlashEngineAmberWarningLamp (Flash Engine Amber Warning Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	5	2	<b>FlashEngineRedStopLamp (Flash Engine Red Stop Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	7	2	<b>FlashEngineMalfuncIndicatorLamp (Flash Engine Malfunc Indicator Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		3	1	8	<b>SuspectParameterNumberLSB (Suspect Parameter Number LSB)</b>		1	0	0 - 255		1)
		4	1	8	<b>SuspectParameterNumberMiB (Suspect Parameter Number Mid Byte)</b>		1	0	0 - 255		2)

		5	1	5	<b>FailureModeIdentifier (Failure Mode Identifier)</b>		1	0	0 - 0		3)
					Above normal (most severe)	0x00					
					Below normal (most severe)	0x01					
					Data erratic	0x02					
					Voltage above normal	0x03					
					Voltage below normal	0x04					
					Current below normal	0x05					
					Current above normal	0x06					
					Mechanical system not responding	0x07					
					Abnormal frequency	0x08					
					Abnormal update rate	0x09					
					Abnormal rate of change	0x0A					
					Root cause not known	0x0B					
					Bad intelligent device	0x0C					
					Out of calibration	0x0D					
					Special instructions	0x0E					
					Above normal (least severe)	0x0F					
					Above normal (moderately severe)	0x10					
					Below normal (least severe)	0x11					
					Below normal (moderately severe)	0x12					
					Received network data in error	0x13					
					Data Drifted High	0x14					
					Data Drifted Low	0x15					
					NotAvailable	0x1F					
		5	6	3	<b>SuspectParameterNumberMS3bit (Suspect Parameter Number MS 3-bit)</b>		1	0	0 - 7		4)
		6	1	7	<b>OccurrenceCount (Occurrence Count)</b>		1	0	0 - 126		
					NotAvailable	0x7F					
		6	8	1	<b>SPNConversionMethod (SPN Conversion Method)</b>		1	0	0 - 1		
					Convert SPNs per the Version 4 definition in SAE J1939-73 chap 5.7.1.11	0x00					
					Convert SPNs per Version 1, 2 or 3 specified in SAE J1939-73 chap 5.7.1.11	0x01					

Note 1) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

Note 2) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

Note 3) Most significant at bit 5

Note 4) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

**2.4.3.27 DM1 (Diagnostic Message 1) - HMS**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18FECAEF	1000	1000	00FECA	6	Cyclic	0	0	CA	EF		Std

The length of the message varies depending on the number of active DTCs. The data length of the message will be at least 8 byte long, for more details see SAE J1939-73



## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
		1	1	2	<b>ProtectLampStatus (Protect Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
	X	1	3	2	<b>AmberWarningLampStatus (Amber Warning Lamp Status)</b>		1	0	0 - 3		
	X				LampOff	0x00					
	X				LampOn	0x01					
	X				Reserved	0x02					
	X				TakeNoAction	0x03					
		1	5	2	<b>RedStopLampStatus (Red Stop Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		1	7	2	<b>MalfunctionIndicatorLampStatus (Malfunction Indicator Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		2	1	2	<b>FlashEngineProtectLamp (Flash Engine Protect Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	3	2	<b>FlashEngineAmberWarningLamp (Flash Engine Amber Warning Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	5	2	<b>FlashEngineRedStopLamp (Flash Engine Red Stop Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	7	2	<b>FlashEngineMalfuncIndicatorLamp (Flash Engine Malfunc Indicator Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		3	1	8	<b>SuspectParameterNumberLSB (Suspect Parameter Number LSB)</b>		1	0	0 - 255		1)
		4	1	8	<b>SuspectParameterNumberMiB (Suspect Parameter Number Mid Byte)</b>		1	0	0 - 255		2)



## External CAN Communication Specification

		5	1	5	<b>FailureModeIdentifier (Failure Mode Identifier)</b>		1	0	0 - 0		3)
					Above normal (most severe)	0x00					
					Below normal (most severe)	0x01					
					Data erratic	0x02					
					Voltage above normal	0x03					
					Voltage below normal	0x04					
					Current below normal	0x05					
					Current above normal	0x06					
					Mechanical system not responding	0x07					
					Abnormal frequency	0x08					
					Abnormal update rate	0x09					
					Abnormal rate of change	0x0A					
					Root cause not known	0x0B					
					Bad intelligent device	0x0C					
					Out of calibration	0x0D					
					Special instructions	0x0E					
					Above normal (least severe)	0x0F					
					Above normal (moderately severe)	0x10					
					Below normal (least severe)	0x11					
					Below normal (moderately severe)	0x12					
					Received network data in error	0x13					
					Data Drifted High	0x14					
					Data Drifted Low	0x15					
					NotAvailable	0x1F					
		5	6	3	<b>SuspectParameterNumberMS3bit (Suspect Parameter Number MS 3-bit)</b>		1	0	0 - 7		4)
		6	1	7	<b>OccurrenceCount (Occurrence Count)</b>		1	0	0 - 126		
					NotAvailable	0x7F					
		6	8	1	<b>SPNConversionMethod (SPN Conversion Method)</b>		1	0	0 - 1		
					Convert SPNs per the Version 4 definition in SAE J1939-73 chap 5.7.1.11	0x00					
					Convert SPNs per Version 1, 2 or 3 specified in SAE J1939-73 chap 5.7.1.11	0x01					

Note 1) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

Note 2) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

Note 3) Most significant at bit 5

Note 4) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

**2.4.3.28 DM1 (Diagnostic Message 1) - K**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18FECA27	1000	1000	00FECA	6	Cyclic	0	0	CA	27		Std

The length of the message varies depending on the number of active DTCs. The data length of the message will be at least 8 byte long, for more details see SAE J1939-73

## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
		1	1	2	<b>ProtectLampStatus (Protect Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
	X	1	3	2	<b>AmberWarningLampStatus (Amber Warning Lamp Status)</b>		1	0	0 - 3		
	X				LampOff	0x00					
	X				LampOn	0x01					
	X				Reserved	0x02					
	X				TakeNoAction	0x03					
		1	5	2	<b>RedStopLampStatus (Red Stop Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		1	7	2	<b>MalfunctionIndicatorLampStatus (Malfunction Indicator Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		2	1	2	<b>FlashEngineProtectLamp (Flash Engine Protect Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	3	2	<b>FlashEngineAmberWarningLamp (Flash Engine Amber Warning Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	5	2	<b>FlashEngineRedStopLamp (Flash Engine Red Stop Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	7	2	<b>FlashEngineMalfuncIndicatorLamp (Flash Engine Malfunc Indicator Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		3	1	8	<b>SuspectParameterNumberLSB (Suspect Parameter Number LSB)</b>		1	0	0 - 255		1)
		4	1	8	<b>SuspectParameterNumberMiB (Suspect Parameter Number Mid Byte)</b>		1	0	0 - 255		2)



		5	1	5	<b>FailureModeIdentifier (Failure Mode Identifier)</b>		1	0	0 - 0		3)
					Above normal (most severe)	0x00					
					Below normal (most severe)	0x01					
					Data erratic	0x02					
					Voltage above normal	0x03					
					Voltage below normal	0x04					
					Current below normal	0x05					
					Current above normal	0x06					
					Mechanical system not responding	0x07					
					Abnormal frequency	0x08					
					Abnormal update rate	0x09					
					Abnormal rate of change	0x0A					
					Root cause not known	0x0B					
					Bad intelligent device	0x0C					
					Out of calibration	0x0D					
					Special instructions	0x0E					
					Above normal (least severe)	0x0F					
					Above normal (moderately severe)	0x10					
					Below normal (least severe)	0x11					
					Below normal (moderately severe)	0x12					
					Received network data in error	0x13					
					Data Drifted High	0x14					
					Data Drifted Low	0x15					
					NotAvailable	0x1F					
		5	6	3	<b>SuspectParameterNumberMS3bit (Suspect Parameter Number MS 3-bit)</b>		1	0	0 - 7		4)
		6	1	7	<b>OccurrenceCount (Occurrence Count)</b>		1	0	0 - 126		
					NotAvailable	0x7F					
		6	8	1	<b>SPNConversionMethod (SPN Conversion Method)</b>		1	0	0 - 1		
					Convert SPNs per the Version 4 definition in SAE J1939-73 chap 5.7.1.11	0x00					
					Convert SPNs per Version 1, 2 or 3 specified in SAE J1939-73 chap 5.7.1.11	0x01					

Note 1) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

Note 2) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

Note 3) Most significant at bit 5

Note 4) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

**2.4.3.29 DM1 (Diagnostic Message 1) - L**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18FECA1B	1000	1000	00FECA	6	Cyclic	0	0	CA	1B		Std

The length of the message varies depending on the number of active DTCs. The data length of the message will be at least 8 byte long, for more details see SAE J1939-73



## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
		1	1	2	<b>ProtectLampStatus (Protect Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
	X	1	3	2	<b>AmberWarningLampStatus (Amber Warning Lamp Status)</b>		1	0	0 - 3		
	X				LampOff	0x00					
	X				LampOn	0x01					
	X				Reserved	0x02					
	X				TakeNoAction	0x03					
		1	5	2	<b>RedStopLampStatus (Red Stop Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		1	7	2	<b>MalfunctionIndicatorLampStatus (Malfunction Indicator Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		2	1	2	<b>FlashEngineProtectLamp (Flash Engine Protect Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	3	2	<b>FlashEngineAmberWarningLamp (Flash Engine Amber Warning Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	5	2	<b>FlashEngineRedStopLamp (Flash Engine Red Stop Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	7	2	<b>FlashEngineMalfuncIndicatorLamp (Flash Engine Malfunc Indicator Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		3	1	8	<b>SuspectParameterNumberLSB (Suspect Parameter Number LSB)</b>		1	0	0 - 255		1)
		4	1	8	<b>SuspectParameterNumberMiB (Suspect Parameter Number Mid Byte)</b>		1	0	0 - 255		2)



## External CAN Communication Specification

		5	1	5	<b>FailureModeIdentifier (Failure Mode Identifier)</b>		1	0	0 - 0		3)
					Above normal (most severe)	0x00					
					Below normal (most severe)	0x01					
					Data erratic	0x02					
					Voltage above normal	0x03					
					Voltage below normal	0x04					
					Current below normal	0x05					
					Current above normal	0x06					
					Mechanical system not responding	0x07					
					Abnormal frequency	0x08					
					Abnormal update rate	0x09					
					Abnormal rate of change	0x0A					
					Root cause not known	0x0B					
					Bad intelligent device	0x0C					
					Out of calibration	0x0D					
					Special instructions	0x0E					
					Above normal (least severe)	0x0F					
					Above normal (moderately severe)	0x10					
					Below normal (least severe)	0x11					
					Below normal (moderately severe)	0x12					
					Received network data in error	0x13					
					Data Drifted High	0x14					
					Data Drifted Low	0x15					
					NotAvailable	0x1F					
		5	6	3	<b>SuspectParameterNumberMS3bit (Suspect Parameter Number MS 3-bit)</b>		1	0	0 - 7		4)
		6	1	7	<b>OccurrenceCount (Occurrence Count)</b>		1	0	0 - 126		
					NotAvailable	0x7F					
		6	8	1	<b>SPNConversionMethod (SPN Conversion Method)</b>		1	0	0 - 1		
					Convert SPNs per the Version 4 definition in SAE J1939-73 chap 5.7.1.11	0x00					
					Convert SPNs per Version 1, 2 or 3 specified in SAE J1939-73 chap 5.7.1.11	0x01					

Note 1) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

Note 2) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

Note 3) Most significant at bit 5

Note 4) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!



### 2.4.3.30 DM1 (Diagnostic Message 1) - RD

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/proprietary
18FECA10	1000	1000	00FECA	6	Cyclic	0	0	CA	10		Std

The length of the message varies depending on the number of active DTCs. The data length of the message will be at least 8 byte long, for more details see SAE J1939-73

## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
		1	1	2	<b>ProtectLampStatus (Protect Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
	X	1	3	2	<b>AmberWarningLampStatus (Amber Warning Lamp Status)</b>		1	0	0 - 3		
	X				LampOff	0x00					
	X				LampOn	0x01					
	X				Reserved	0x02					
	X				TakeNoAction	0x03					
		1	5	2	<b>RedStopLampStatus (Red Stop Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		1	7	2	<b>MalfunctionIndicatorLampStatus (Malfunction Indicator Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		2	1	2	<b>FlashEngineProtectLamp (Flash Engine Protect Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	3	2	<b>FlashEngineAmberWarningLamp (Flash Engine Amber Warning Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	5	2	<b>FlashEngineRedStopLamp (Flash Engine Red Stop Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	7	2	<b>FlashEngineMalfuncIndicatorLamp (Flash Engine Malfunc Indicator Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		3	1	8	<b>SuspectParameterNumberLSB (Suspect Parameter Number LSB)</b>		1	0	0 - 255		1)
		4	1	8	<b>SuspectParameterNumberMiB (Suspect Parameter Number Mid Byte)</b>		1	0	0 - 255		2)



		5	1	5	<b>FailureModeIdentifier (Failure Mode Identifier)</b>		1	0	0 - 0		3)
					Above normal (most severe)	0x00					
					Below normal (most severe)	0x01					
					Data erratic	0x02					
					Voltage above normal	0x03					
					Voltage below normal	0x04					
					Current below normal	0x05					
					Current above normal	0x06					
					Mechanical system not responding	0x07					
					Abnormal frequency	0x08					
					Abnormal update rate	0x09					
					Abnormal rate of change	0x0A					
					Root cause not known	0x0B					
					Bad intelligent device	0x0C					
					Out of calibration	0x0D					
					Special instructions	0x0E					
					Above normal (least severe)	0x0F					
					Above normal (moderately severe)	0x10					
					Below normal (least severe)	0x11					
					Below normal (moderately severe)	0x12					
					Received network data in error	0x13					
					Data Drifted High	0x14					
					Data Drifted Low	0x15					
					NotAvailable	0x1F					
		5	6	3	<b>SuspectParameterNumberMS3bit (Suspect Parameter Number MS 3-bit)</b>		1	0	0 - 7		4)
		6	1	7	<b>OccurrenceCount (Occurrence Count)</b>		1	0	0 - 126		
					NotAvailable	0x7F					
		6	8	1	<b>SPNConversionMethod (SPN Conversion Method)</b>		1	0	0 - 1		
					Convert SPNs per the Version 4 definition in SAE J1939-73 chap 5.7.1.11	0x00					
					Convert SPNs per Version 1, 2 or 3 specified in SAE J1939-73 chap 5.7.1.11	0x01					

Note 1) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

Note 2) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

Note 3) Most significant at bit 5

Note 4) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

**2.4.3.31 DM1 (Diagnostic Message 1) - T**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18FECA03	1000	1000	00FECA	6	Cyclic	0	0	CA	03		Std

The length of the message varies depending on the number of active DTCs. The data length of the message will be at least 8 byte long, for more details see SAE J1939-73



## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
		1	1	2	<b>ProtectLampStatus (Protect Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
	X	1	3	2	<b>AmberWarningLampStatus (Amber Warning Lamp Status)</b>		1	0	0 - 3		
	X				LampOff	0x00					
	X				LampOn	0x01					
	X				Reserved	0x02					
	X				TakeNoAction	0x03					
		1	5	2	<b>RedStopLampStatus (Red Stop Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		1	7	2	<b>MalfunctionIndicatorLampStatus (Malfunction Indicator Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		2	1	2	<b>FlashEngineProtectLamp (Flash Engine Protect Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	3	2	<b>FlashEngineAmberWarningLamp (Flash Engine Amber Warning Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	5	2	<b>FlashEngineRedStopLamp (Flash Engine Red Stop Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	7	2	<b>FlashEngineMalfuncIndicatorLamp (Flash Engine Malfunc Indicator Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		3	1	8	<b>SuspectParameterNumberLSB (Suspect Parameter Number LSB)</b>		1	0	0 - 255		1)
		4	1	8	<b>SuspectParameterNumberMiB (Suspect Parameter Number Mid Byte)</b>		1	0	0 - 255		2)



## External CAN Communication Specification

		5	1	5	<b>FailureModeIdentifier (Failure Mode Identifier)</b>		1	0	0 - 0		3)
					Above normal (most severe)	0x00					
					Below normal (most severe)	0x01					
					Data erratic	0x02					
					Voltage above normal	0x03					
					Voltage below normal	0x04					
					Current below normal	0x05					
					Current above normal	0x06					
					Mechanical system not responding	0x07					
					Abnormal frequency	0x08					
					Abnormal update rate	0x09					
					Abnormal rate of change	0x0A					
					Root cause not known	0x0B					
					Bad intelligent device	0x0C					
					Out of calibration	0x0D					
					Special instructions	0x0E					
					Above normal (least severe)	0x0F					
					Above normal (moderately severe)	0x10					
					Below normal (least severe)	0x11					
					Below normal (moderately severe)	0x12					
					Received network data in error	0x13					
					Data Drifted High	0x14					
					Data Drifted Low	0x15					
					NotAvailable	0x1F					
		5	6	3	<b>SuspectParameterNumberMS3bit (Suspect Parameter Number MS 3-bit)</b>		1	0	0 - 7		4)
		6	1	7	<b>OccurrenceCount (Occurrence Count)</b>		1	0	0 - 126		
					NotAvailable	0x7F					
		6	8	1	<b>SPNConversionMethod (SPN Conversion Method)</b>		1	0	0 - 1		
					Convert SPNs per the Version 4 definition in SAE J1939-73 chap 5.7.1.11	0x00					
					Convert SPNs per Version 1, 2 or 3 specified in SAE J1939-73 chap 5.7.1.11	0x01					

Note 1) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

Note 2) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

Note 3) Most significant at bit 5

Note 4) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

**2.4.3.32 DM1 (Diagnostic Message 1) - TM**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18FECA33	1000	1000	00FECA	6	Cyclic	0	0	CA	33		Std

The length of the message varies depending on the number of active DTCs. The data length of the message will be at least 8 byte long, for more details see SAE J1939-73



## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
		1	1	2	<b>ProtectLampStatus (Protect Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
	X	1	3	2	<b>AmberWarningLampStatus (Amber Warning Lamp Status)</b>		1	0	0 - 3		
	X				LampOff	0x00					
	X				LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		1	5	2	<b>RedStopLampStatus (Red Stop Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		1	7	2	<b>MalfunctionIndicatorLampStatus (Malfunction Indicator Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		2	1	2	<b>FlashEngineProtectLamp (Flash Engine Protect Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	3	2	<b>FlashEngineAmberWarningLamp (Flash Engine Amber Warning Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	5	2	<b>FlashEngineRedStopLamp (Flash Engine Red Stop Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	7	2	<b>FlashEngineMalfuncIndicatorLamp (Flash Engine Malfunc Indicator Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		3	1	8	<b>SuspectParameterNumberLSB (Suspect Parameter Number LSB)</b>		1	0	0 - 255		1)
		4	1	8	<b>SuspectParameterNumberMiB (Suspect Parameter Number Mid Byte)</b>		1	0	0 - 255		2)



## External CAN Communication Specification

		5	1	5	<b>FailureModeIdentifier (Failure Mode Identifier)</b>		1	0	0 - 0		3)
					Above normal (most severe)	0x00					
					Below normal (most severe)	0x01					
					Data erratic	0x02					
					Voltage above normal	0x03					
					Voltage below normal	0x04					
					Current below normal	0x05					
					Current above normal	0x06					
					Mechanical system not responding	0x07					
					Abnormal frequency	0x08					
					Abnormal update rate	0x09					
					Abnormal rate of change	0x0A					
					Root cause not known	0x0B					
					Bad intelligent device	0x0C					
					Out of calibration	0x0D					
					Special instructions	0x0E					
					Above normal (least severe)	0x0F					
					Above normal (moderately severe)	0x10					
					Below normal (least severe)	0x11					
					Below normal (moderately severe)	0x12					
					Received network data in error	0x13					
					Data Drifted High	0x14					
					Data Drifted Low	0x15					
					NotAvailable	0x1F					
		5	6	3	<b>SuspectParameterNumberMS3bit (Suspect Parameter Number MS 3-bit)</b>		1	0	0 - 7		4)
		6	1	7	<b>OccurrenceCount (Occurrence Count)</b>		1	0	0 - 126		
					NotAvailable	0x7F					
		6	8	1	<b>SPNConversionMethod (SPN Conversion Method)</b>		1	0	0 - 1		
					Convert SPNs per the Version 4 definition in SAE J1939-73 chap 5.7.1.11	0x00					
					Convert SPNs per Version 1, 2 or 3 specified in SAE J1939-73 chap 5.7.1.11	0x01					

Note 1) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

Note 2) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

Note 3) Most significant at bit 5

Note 4) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

**2.4.3.33 DM1 (Diagnostic Message 1) - WTA**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18FECA45	1000	1000	00FECA	6	Cyclic	0	0	CA	45		Std

The length of the message varies depending on the number of active DTCs. The data length of the message will be at least 8 byte long, for more details see SAE J1939-73

## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
		1	1	2	<b>ProtectLampStatus (Protect Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
	X	1	3	2	<b>AmberWarningLampStatus (Amber Warning Lamp Status)</b>		1	0	0 - 3		
	X				LampOff	0x00					
	X				LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		1	5	2	<b>RedStopLampStatus (Red Stop Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		1	7	2	<b>MalfunctionIndicatorLampStatus (Malfunction Indicator Lamp Status)</b>		1	0	0 - 3		
					LampOff	0x00					
					LampOn	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		2	1	2	<b>FlashEngineProtectLamp (Flash Engine Protect Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	3	2	<b>FlashEngineAmberWarningLamp (Flash Engine Amber Warning Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	5	2	<b>FlashEngineRedStopLamp (Flash Engine Red Stop Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		2	7	2	<b>FlashEngineMalfuncIndicatorLamp (Flash Engine Malfunc Indicator Lamp)</b>		1	0	0 - 3		
					SlowFlash	0x00					
					FastFlash	0x01					
					Reserved	0x02					
					DoNotFlash	0x03					
		3	1	8	<b>SuspectParameterNumberLSB (Suspect Parameter Number LSB)</b>		1	0	0 - 255		1)
		4	1	8	<b>SuspectParameterNumberMiB (Suspect Parameter Number Mid Byte)</b>		1	0	0 - 255		2)



## External CAN Communication Specification

		5	1	5	<b>FailureModeIdentifier (Failure Mode Identifier)</b>		1	0	0 - 0		3)
					Above normal (most severe)	0x00					
					Below normal (most severe)	0x01					
					Data erratic	0x02					
					Voltage above normal	0x03					
					Voltage below normal	0x04					
					Current below normal	0x05					
					Current above normal	0x06					
					Mechanical system not responding	0x07					
					Abnormal frequency	0x08					
					Abnormal update rate	0x09					
					Abnormal rate of change	0x0A					
					Root cause not known	0x0B					
					Bad intelligent device	0x0C					
					Out of calibration	0x0D					
					Special instructions	0x0E					
					Above normal (least severe)	0x0F					
					Above normal (moderately severe)	0x10					
					Below normal (least severe)	0x11					
					Below normal (moderately severe)	0x12					
					Received network data in error	0x13					
					Data Drifted High	0x14					
					Data Drifted Low	0x15					
					NotAvailable	0x1F					
		5	6	3	<b>SuspectParameterNumberMS3bit (Suspect Parameter Number MS 3-bit)</b>		1	0	0 - 7		4)
		6	1	7	<b>OccurrenceCount (Occurrence Count)</b>		1	0	0 - 126		
					NotAvailable	0x7F					
		6	8	1	<b>SPNConversionMethod (SPN Conversion Method)</b>		1	0	0 - 1		
					Convert SPNs per the Version 4 definition in SAE J1939-73 chap 5.7.1.11	0x00					
					Convert SPNs per Version 1, 2 or 3 specified in SAE J1939-73 chap 5.7.1.11	0x01					

Note 1) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

Note 2) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!

Note 3) Most significant at bit 5

Note 4) See parameter 'SPN conversion' method and its interpretation in SAE J1939-73!



**2.4.3.34 EAC1 (Electronic Axle Controller 1) - K**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18F00627	500	500	00F006	6	Cyclic	0	0	06	27		Std



## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
		1	1	8	<b>Location (Location)</b>		1	0	0 - 255		1)
					Axle1Tire1	0x00					
					Axle1Tire2	0x01					
					Axle1	0x0F					
					Axle2Tire1	0x10					
					Axle2Tire2	0x11					
					Axle2Tire3	0x12					
					Axle2Tire4	0x13					
					Axle2	0x1F					
					Axle3Tire1	0x20					
					Axle3Tire2	0x21					
					Axle3Tire3	0x22					
					Axle3Tire4	0x23					
					Axle3	0x2F					
					Axle4Tire1	0x30					
					Axle4Tire2	0x31					
					Axle4Tire3	0x32					
					Axle4Tire4	0x33					
					Axle4	0x3F					
					Axle5Tire1	0x40					
					Axle5Tire2	0x41					
					Axle5Tire3	0x42					
					Axle5Tire4	0x43					
					Axle5	0x4F					
					Error	0xFE					
					NotAvailable	0xFF					
	X	2	1	2	<b>DifferentialLockFrontAxle1 (Front Axle 1)</b>		1	0	0 - 3		
	X				DifferentialLockDisengaged	0x00					
	X				DifferentialLockEngaged	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	2	3	2	<b>DifferentialLockFrontAxle2 (Front Axle 2)</b>		1	0	0 - 3		
	X				DifferentialLockDisengaged	0x00					
	X				DifferentialLockEngaged	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
		2	5	2	<b>DifferentialLockRearAxle1 (Rear Axle 1)</b>		1	0	0 - 3		
					DifferentialLockDisengaged	0x00					
					DifferentialLockEngaged	0x01					
					Error	0x02					
					NotAvailable	0x03					
		2	7	2	<b>DifferentialLockRearAxle2 (Rear Axle 2)</b>		1	0	0 - 3		
					DifferentialLockDisengaged	0x00					
					DifferentialLockEngaged	0x01					
					Error	0x02					
					NotAvailable	0x03					



		3	1	2	<b>DifferentialCentral (Central)</b>		1	0	0 - 3		
					DifferentialLockDisengaged	0x00					
					DifferentialLockEngaged	0x01					
					Error	0x02					
					NotAvailable	0x03					
		3	3	2	<b>DifferentialCentralFront (Central Front)</b>		1	0	0 - 3		
					DifferentialLockDisengaged	0x00					
					DifferentialLockEngaged	0x01					
					Error	0x02					
					NotAvailable	0x03					
		3	5	2	<b>DifferentialCentralRear (Differential Lock State - Central Rear)</b>		1	0	0 - 3		
					DifferentialLockDisengaged	0x00					
					DifferentialLockEngaged	0x01					
					Error	0x02					
					NotAvailable	0x03					
		4	1	2	<b>FrontAxleGroupEngagementStatus (Front Axle Group Engagement Status)</b>		1	0	0 - 3		
					FrontAxleGroupDisengaged	0x00					
					FrontAxleGroupEngaged	0x01					
					Error	0x02					
					NotAvailable	0x03					
		4	3	2	<b>RearAxleGroupEngagementStatus (Rear Axle Group Engagement Status)</b>		1	0	0 - 3		
					RearAxleGroupDisengaged	0x00					
					RearAxleGroupEngaged	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					

Note 1) Bit-mapped

**2.4.3.35 EBC1 (Electronic Brake Controller 1) - A**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18F0010B	100	100	00F001	6	Cyclic	0	0	01	0B		Std

Tmin 100ms and on change of state in parameter 'EBS brake switch'.



## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	2	<b>ASREngineControlActive (ASR Engine Control Active)</b>		1	0	0 - 3		
	X				ASREngineControlPassiveButInstalled	0x00					
	X				ASREngineControlActive	0x01					
	X				Reserved	0x02					
	X				NotAvailable	0x03					
	X	1	3	2	<b>ASRBrakeControlActive (ASR Brake Control Active)</b>		1	0	0 - 3		
	X				ASRBrakeControlPassiveButInstalled	0x00					
	X				ASRBrakeControlActive	0x01					
	X				Reserved	0x02					
	X				NotAvailable	0x03					
	X	1	5	2	<b>ABSActive (Anti-Lock Braking (ABS) Active)</b>		1	0	0 - 3		1)
	X				ABSPassiveButInstalled	0x00					
	X				ABSActive	0x01					
	X				Reserved	0x02					
	X				NotAvailable	0x03					
	X	1	7	2	<b>EBSBrakeSwitch (EBS Brake Switch)</b>		1	0	0 - 3		
	X				BrakePedalsNotBeingPressed	0x00					
	X				BrakePedalsBeingPressed	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	2	1	8	<b>BrakePedalPosition (Brake Pedal Position)</b>		0.4	0	0 - 100	%	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	3	1	2	<b>ABSOffroadSwitch (ABS Offroad Switch)</b>		1	0	0 - 3		2)
	X				ABSOffroadSwitchPassive	0x00					
	X				ABSOffroadSwitchActive	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	3	3	2	<b>ASROffroadSwitch (ASR Offroad Switch)</b>		1	0	0 - 3		3)
	X				ASROffroadSwitchPassive	0x00					
	X				ASROffroadSwitchActive	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	3	5	2	<b>ASRHillHolderSwitch (ASR Hill Holder Switch)</b>		1	0	0 - 3		
	X				ASRHillHolderSwitchPassive	0x00					
	X				ASRHillHolderSwitchActive	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
		3	7	2	<b>TractionControlOverrideSwitch (Traction Control Override Switch)</b>		1	0	0 - 3		
					Off	0x00					
					On	0x01					
					Error	0x02					
					NotAvailable	0x03					



## External CAN Communication Specification

		4	1	2	<b>AcceleratorInterlockSwitch (Accelerator Interlock Switch)</b>		1	0	0 - 3		
					Off	0x00					
					On	0x01					
					Error	0x02					
					NotAvailable	0x03					
		4	3	2	<b>EngineDerateSwitch (Engine Derate Switch)</b>		1	0	0 - 3		
					Off	0x00					
					On	0x01					
					Error	0x02					
					NotAvailable	0x03					
		4	5	2	<b>AuxiliaryEngineShutdownSwitch (Auxiliary Enging Shutdown Switch)</b>		1	0	0 - 3		
					Off	0x00					
					On	0x01					
					Error	0x02					
					NotAvailable	0x03					
		4	7	2	<b>RemoteAcceleratorEnableSwitch (Remote Accelerator Enable Switch)</b>		1	0	0 - 3		
					Off	0x00					
					On	0x01					
					Error	0x02					
					NotAvailable	0x03					
		5	1	8	<b>EngineRetarderSelection (Engine Retarder Selection)</b>		0.4	0	0 - 100	%	
					Error	0xFE					
					NotAvailable	0xFF					
	X	6	1	2	<b>ABSFullyOperational (ABS Fully Operational)</b>		1	0	0 - 3		
	X				ABSNotFullyOperational	0x00					
	X				ABSFullyOperational	0x01					
	X				Reserved	0x02					
	X				NotAvailable	0x03					
	X	6	3	2	<b>EBSRedWarningState (EBS Red Warning State)</b>		1	0	0 - 3		
	X				Off	0x00					
	X				On	0x01					
	X				Reserved	0x02					
	X				TakeNoAction	0x03					
	X	6	5	2	<b>ABS_EBSAmberWarningState (ABS/EBS Amber Warning State)</b>		1	0	0 - 3		
	X				Off	0x00					
	X				On	0x01					
	X				Reserved	0x02					
	X				TakeNoAction	0x03					
	X	6	7	2	<b>ATC_ASRLampState (ATC/ASR Lamp State (Powered Vehicle))</b>		1	0	0 - 3		
	X				Off	0x00					
	X				On	0x01					
	X				Reserved	0x02					
	X				TakeNoAction	0x03					
	X	7	1	8	<b>SAOfControllingDevForBrakeCtrl (Source Address Of Controlling Device For Brake Control)</b>		1	0	0 - 255		4)
	X				Transmission #1	0x03					
	X				Cruise Control Manager	0x11					
	X				Articulation Control	0x1B					
	X				Parking Brake Controller	0x50					
	X				Powertrain Controller	0x5A					

	X				Bodywork Communication Interface	0xE6					
	X				Error	0xFE					
	X				NotAvailable	0xFF					
		8	3	2	<b>HaltBrakeSwitch (Halt Brake Switch)</b>		1	0	0 - 3		
					HaltBrakeSwitchPassive	0x00					
					HaltBrakeSwitchActive	0x01					
					Error	0x02					
					NotAvailable	0x03					
		8	5	2	<b>TrailerABSStatus (Trailer ABS Status)</b>		1	0	0 - 3		
					TrlrABSSStsInfrmtNtAvlBlPrmtrN	0x00					
					TrailerABSActive	0x01					
					Reserved	0x02					
					TrlrABSSStsInfrmtNtAvlBlPrmtrN	0x03					
		8	7	2	<b>TractorMountedTrailerABSWarning (Tractor Mounted Trailer ABS Warning Signal)</b>		1	0	0 - 3		
					Off	0x00					
					On	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					

Note 1) 00 when drive axle stable and ABS inactive, 01 when instable drive axle or ABS active.

Note 2) Describes the function, not switch position. 00 when function not active, 01 when active. Value 3 is only sent with ABS-offroad isn't installed.

Note 3) Describes the function, not switch position. 00 when function not active, 01 when active

Note 4) For ACS use

## 2.4.3.36 EBC2 (Wheel Speed Information) - K

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/proprietary
18FEBF27	100	100	00FEBF	6	Cyclic	0	0	BF	27		Std

Maximum reported speed by EBS is 225 km/h.

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	16	<b>FrontAxleSpeed (Mean Front Axle Speed)</b>		0.00390625	0	0 - 250.99609375	km/h	
	X				Error	0xFE00					
	X				NotAvailable	0xFFFF					
		3	1	8	<b>RelSpeedFrontAxleLeftWheel (Relative Speed Front Axle Left Wheel)</b>		0.0625	-7.8125	-7.8125 - 7.8125	km/h	
					Error	0xFE					
					NotAvailable	0xFF					
		4	1	8	<b>RelSpeedFrontAxleRightWheel (Relative Speed Front Axle Right Wheel)</b>		0.0625	-7.8125	-7.8125 - 7.8125	km/h	
					Error	0xFE					
					NotAvailable	0xFF					
		5	1	8	<b>RelSpeedRearAxle_1LeftWheel (RelativeSpeedRearAxle1LeftWheel)</b>		0.0625	-7.8125	-7.8125 - 7.8125	km/h	
		6	1	8	<b>RelSpeedRearAxle_1RightWheel (RelativeSpeedRearAxle1RightWheel)</b>		0.0625	-7.8125	-7.8125 - 7.8125	km/h	
		7	1	8	<b>RelSpeedRearAxle_2LeftWheel (Relative Speed Third Axle Left Wheel)</b>		0.0625	-7.8125	-7.8125 - 7.8125	km/h	
					Error	0xFE					
					NotAvailable	0xFF					
		8	1	8	<b>RelSpeedRearAxle_2RightWheel (Relative Speed Third Axle Right Wheel)</b>		0.0625	-7.8125	-7.8125 - 7.8125	km/h	
					Error	0xFE					
					NotAvailable	0xFF					



## 2.4.3.37 EBC4 (Wheel Brake Lining Remaining Information) - A

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/proprietary
1CFEAC0B	5000	5000	00FEAC	7	Cyclic	0	0	AC	0B		Std

Only sent when an EBS system is installed

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	8	<b>BrakeLiningRemainingFrontLeft (Brake Lining Remaining, FrontAxleLeftWheel)</b>		0.4	0	0 - 100	%	1)
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	2	1	8	<b>BrakeLiningRemainingFrontRight (Brake Lining Remaining, FrontAxleRightWheel)</b>		0.4	0	0 - 100	%	2)
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	3	1	8	<b>BrakeLiningRemainingRear1Left (Brake Lining Remaining, RearAxle1LeftWheel)</b>		0.4	0	0 - 100	%	3)
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	4	1	8	<b>BrakeLiningRemainingRear1Right (Brake Lining Remaining, RearAxle1RightWheel)</b>		0.4	0	0 - 100	%	4)
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	5	1	8	<b>BrakeLiningRemainingRear2Left (Brake Lining Remaining, RearAxle2LeftWheel)</b>		0.4	0	0 - 100	%	5)
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	6	1	8	<b>BrakeLiningRemainingRear2Right (Brake Lining Remaining, RearAxle2RightWheel)</b>		0.4	0	0 - 100	%	6)
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	7	1	8	<b>BrakeLiningRemainingRear3Left (Brake Lining Remaining, RearAxle3LeftWheel)</b>		0.4	0	0 - 100	%	7)
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	8	1	8	<b>BrakeLiningRemainingRear3Right (Brake Lining Remaining, RearAxle3RightWheel)</b>		0.4	0	0 - 100	%	8)
	X				Error	0xFE					
	X				NotAvailable	0xFF					

Note 1) Vehicles first axle (counting axles from front to rear).

Note 2) Vehicles first axle (counting axles from front to rear).

Note 3) Vehicles second axle (counting axles from front to rear).

Note 4) Vehicles second axle (counting axles from front to rear).

Note 5) Vehicles third axle (counting axles from front to rear).

Note 6) Vehicles third axle (counting axles from front to rear).

Note 7) Vehicles fourth axle (counting axles from front to rear).

Note 8) Vehicles fourth axle (counting axles from front to rear).

**2.4.3.38 EBC5 (Electronic Brake Controller 5) - A**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18FDC40B	10	100	00FDC4	6	On Change	0	0	C4	0B		Std

OnChange for changes in XBRActiveControlMode.

## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	2	<b>BrakeTemperatureWarning (Brake Temperature Warning)</b>		1	0	0 - 3		
	X				NotActive	0x00					
	X				Active	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	1	3	3	<b>HaltBrakeMode (Halt Brake Mode)</b>		1	0	0 - 7		
	X				Inactive	0x00					
	X				Active	0x01					
	X				ActiveButNotWorkingProperly	0x02					
	X				NotDefined	0x03					
	X				NotDefined	0x04					
	X				NotDefined	0x05					
	X				HaltBrakeNotFunctional	0x06					
	X				NotAvailable	0x07					
	X	1	6	3	<b>HillHolderMode (Hill Holder Mode)</b>		1	0	0 - 7		1)
	X				Inactive	0x00					
	X				Active	0x01					
	X				ActiveButWillChangeToInactiveInAShortTime	0x02					
	X				ActiveButWillActivateParkingBrakeIfNeeded	0x03					
	X				NotFunctional	0x06					
	X				NotAvailable	0x07					
	X	2	1	2	<b>FoundationBrakeUse (Foundation Brake Use)</b>		1	0	0 - 3		
	X				FoundationBrakesNotInUse	0x00					
	X				FoundationBrakesInUse	0x01					
	X				Reserved	0x02					
	X				NotAvailable	0x03					
	X	2	3	2	<b>XBRSystemState (XBR System State)</b>		1	0	0 - 3		
	X				Any external brake demand will be accepted (brake system fully operational)	0x00					
	X				Only external brake demand of highest XBR Priority (00) will be accepted (e.g. because the temperature limit of the brake system is exceeded)	0x01					
	X				No external brake demand will be accepted (e.g. because of fault in brake system)	0x02					
	X				TakeNoAction	0x03					
	X	2	5	4	<b>XBRActiveControlMode (XBR Active Control Mode)</b>		1	0	0 - 15		
	X				No brake demand being executed (default mode)	0x00					
	X				Driver's brake demand being executed, no external brake demand	0x01					
	X				Addition mode of XBR acceleration control being executed	0x02					
	X				Maximum mode of XBR acceleration control being executed	0x03					
	X				1110ReservedForSAEAssignment	0x04					
	X				TakeNoAction	0x0F					



## External CAN Communication Specification

	X	3	1	8	<b>XBRAccelerationLimit (XBR Acceleration Limit)</b>		0.1	-12.5	-10 - 10	m/s <sup>2</sup>	
	X				Reserved	0xFE					
	X				TakeNoAction	0xFF					
		4	1	2	<b>ParkingBrakeActuatorFullyActivat (Parking Brake Actuator Fully Activated)</b>		1	0	0 - 3		

Note 1) The state 'Active, but will change to inactive in a short time' will be introduced SOP0809

**2.4.3.39 EEC1 (Electronic Engine Controller 1) - E**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
0CF00400	20	20	00F004	3	Cyclic	0	0	04	00		Std



## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	4	<b>EngineRetarderTorqueMode (Engine and Retarder Torque Mode)</b>		1	0	0 - 15		
	X				LowIdleGovernor (default mode)	0x00					
	X				AcceleratorPedal	0x01					
	X				CruiseControl	0x02					
	X				PTOGovernor	0x03					
	X				RoadSpeedGoverning	0x04					
	X				ASRControl	0x05					
	X				TransmissionControl	0x06					
	X				ABSControl	0x07					
	X				TorqueLimiting	0x08					
	X				HighSpeedGovernor	0x09					
	X				BrakeSystem	0x0A					
	X				RemoteAccelerator	0x0B					
	X				ServiceProcedure	0x0C					
	X				NotDefined	0x0D					
	X				Other	0x0E					
	X				NotAvailable	0x0F					
		1	5	4	<b>ActualEngine_PercTorqueHighRes (Actual Engine - Percent Torque High Resolution)</b>		0.125	0	0 - 0.875	%	1)
					NotAvailable	0x08					
					NotAvailable	0x09					
					NotAvailable	0x0A					
					NotAvailable	0x0B					
					NotAvailable	0x0C					
					NotAvailable	0x0D					
					NotAvailable	0x0E					
					NotAvailable	0x0F					
	X	2	1	8	<b>DriversDemandEngine_PercTorque (Drivers Demand Engine - Percent Torque)</b>		1	-125	-125 - 125	%	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	3	1	8	<b>ActualEngine_PercTorque (Actual Engine - Percent Torque)</b>		1	-125	-125 - 125	%	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	4	1	16	<b>EngineSpeed (Engine Speed)</b>		0.125	0	0 - 8031.88	rpm	
	X				Error	0xFE00					
	X				NotAvailable	0xFF00					
		6	1	8	<b>SAofCntrlDevForEngControl (Source Address Of Controlling Device For Engine Control)</b>		1	0	0 - 255		
					Error	0xFE					
					NotAvailable	0xFF					
		7	1	4	<b>EngineStarterMode (Engine Starter Mode)</b>		1	0	0 - 15		
					startNotRqed	0x00					
					starterActiveGearNotEngaged	0x01					
					starterActiveGearEngaged	0x02					
					strtrFnshdStrtrNtActvAftHvngBnA	0x03					
					strtrInhbtdDToEngAlreadyRunning	0x04					



					strtrInhbtdDTEngNtReadyForStart	0x05					
					strtrInhbtdDTDrvInEnggdOthrTrns	0x06					
					strtrInhbtdDTToActiveImmobilizer	0x07					
					strtrInhbtdDueToStarterOvertemp	0x08					
					1011Reserved	0x09					
					starterInhibitedReasonUnknown	0x0C					
					error	0x0E					
					NotAvailable	0x0F					
	X	8	1	8	<b>EngineDemandPercentTorque (Engine Demand - PercentTorque)</b>		1	-125	-125 - 125	%	
	X				Error	0xFE					
	X				NotAvailable	0xFF					

Note 1) Bit pattern 1000-1111 = NotAvailable

**2.4.3.40 EEC2 (Electronic Engine Controller 2) - E**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
0CF00300	50	50	00F003	3	Cyclic	0	0	03	00		Std





## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	2	<b>APLowIdleSwitch (Accelerator Pedal Low Idle Switch)</b>		1	0	0 - 3		
	X				AccelPedalNotInLowIdleCondition	0x00					
	X				AccelPedalInLowIdleCondition	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	1	3	2	<b>APKickdownSwitch (Accelerator Pedal Kickdown Switch)</b>		1	0	0 - 3		
	X				KickdownPassive	0x00					
	X				KickdownActive	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
		1	5	2	<b>RoadSpeedLimitStatus (Road Speed Limit Status)</b>		1	0	0 - 3		
					Active	0x00					
					NotActive	0x01					
		1	7	2	<b>AccelPedal2LowIdleSwitch (Accelerator Pedal 2 Low Idle Switch)</b>		1	0	0 - 3		
					AccelPedalNotInLowIdleCondition	0x00					
					AccelPedalInLowIdleCondition	0x01					
					Error	0x02					
					NotAvailable	0x03					
	X	2	1	8	<b>AcceleratorPedalPosition (Accelerator Pedal Position)</b>		0.4	0	0 - 100	%	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	3	1	8	<b>PercentLoadAtCurrentSpeed (Percent Load At Current Speed)</b>		1	0	0 - 250	%	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
		4	1	8	<b>RemoteAccelerator (Remote Accelerator Pedal Position)</b>		0.4	0	0 - 100	%	
					Error	0xFE					
					NotAvailable	0xFF					
		5	1	8	<b>AccelPedalPos2 (Accelerator Pedal Position 2)</b>		0.4	0	0 - 100	%	
		6	1	2	<b>VhclAccelerationRateLimitStatus (Vehicle Acceleration Rate Limit Status)</b>		1	0	0 - 3		
					LimitNotActive	0x00					
					LimitActive	0x01					
					Reserved	0x02					
					NotAvailable	0x03					
		6	3	2	<b>MomEngMaxPowEnableFeedb (Momentary Engine Maximum Power Enable Feedback)</b>		1	0	0 - 3		
					Disabled	0x00					
					Supported	0x01					
					Reserved	0x02					
					Don'tCare	0x03					
		6	5	2	<b>DPFThermalManagementActive (DPF Thermal Management Active)</b>		1	0	0 - 3		
					DPF Thermal Management is not ac	0x00					
					DPF Thermal Management is active	0x01					



					Reserved	0x02					
					Don't care	0x03					
		6	7	2	<b>SCRThermalManagementActive (SCR Thermal Management Active)</b>		1	0	0 - 3		
					SCR Thermal Management is not ac	0x00					
					SCR Thermal Management is active	0x01					
					Reserved	0x02					
					Don't care	0x03					
		7	1	8	<b>ActMaxAvailEngPercTorq (Actual Maximum Available Engine - Percent Torque)</b>		0.4	0	0 - 100	%	
					Error	0xFE					
					NotAvailable	0xFF					
		8	1	8	<b>EstPumpingPercTorque (Estimated Pumping - Percent Torque)</b>		1	-125	-125 - 125	%	
					Error	0xFE					
					NotAvailable	0xFF					



### 2.4.3.41 EngineConfig (Engine Configuration) - E

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/proprietary
18ECFF00 18EBFF00 (FEE3)	5000	5000	00FEE3	6	Cyclic	0	0	E3	00	FE	Std

Since the parameter group is longer than 8 bytes the message shall be sent according to the 'Transport protocol - Data Transfer (TP.DT)' SAE J1939-21. It is transmitted with BAM and TP.DT, why the identifier does not reflect the PGN 00 FE E3.



## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	16	<b>EngineSpeedAtIdlePt1 (Engine Speed At Idle, Point 1)</b>		0.125	0	0 - 8031.88	rpm	
	X				Error	0xFE00					
	X				NotAvailable	0xFF00					
	X	3	1	8	<b>EngPercentTorqueAtIdlePt1 (Percent Torque At Idle, Point1)</b>		1	-125	-125 - 125	%	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	4	1	16	<b>EngineSpeedAtPt2 (Engine Speed At Point 2)</b>		0.125	0	0 - 8031.88	rpm	
	X				Error	0xFE00					
	X				NotAvailable	0xFF00					
	X	6	1	8	<b>EngPercentTorqueAtPt2 (Percent Torque At Point 2)</b>		1	-125	-125 - 125	%	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	7	1	16	<b>EngineSpeedAtPt3 (Engine Speed At Point 3)</b>		0.125	0	0 - 8031.88	rpm	
	X				Error	0xFE00					
	X				NotAvailable	0xFF00					
	X	9	1	8	<b>EngPercentTorqueAtPt3 (Percent Torque At Point 3)</b>		1	-125	-125 - 125	%	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	10	1	16	<b>EngineSpeedAtPt4 (Engine Speed At Point 4)</b>		0.125	0	0 - 8031.88	rpm	
	X				Error	0xFE00					
	X				NotAvailable	0xFF00					
	X	12	1	8	<b>EngPercentTorqueAtPt4 (Percent Torque At Point 4)</b>		1	-125	-125 - 125	%	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	13	1	16	<b>EngineSpeedAtPt5 (Engine Speed At Point 5)</b>		0.125	0	0 - 8031.88	rpm	
	X				Error	0xFE00					
	X				NotAvailable	0xFF00					
	X	15	1	8	<b>EngPercentTorqueAtPt5 (Percent Torque At Point 5)</b>		1	-125	-125 - 125	%	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	16	1	16	<b>EngineSpeedAtHighIdlePt6 (Engine Speed At High Idle, Point 6)</b>		0.125	0	0 - 8031.88	rpm	
	X				Error	0xFE00					
	X				NotAvailable	0xFF00					
		18	1	16	<b>GainOfEndspeedGovernor (Gain (KP) Of The Endspeed Governor)</b>		1	0	0 - 50.2	%/rpm	
					Error	0xFE00					
					NotAvailable	0xFF00					
	X	20	1	16	<b>ReferenceEngineTorque (Reference Engine Torque)</b>		1	0	0 - 64255	Nm	
	X				Error	0xFE00					
	X				NotAvailable	0xFF00					



## External CAN Communication Specification

		22	1	16	<b>MaxMomentEngineOvrwrtSpeedPt7 (Maximum Momentary Engine Override Speed, Point7)</b>		0.125	0	0 - 8031.88	rpm	
					Error	0xFE00					
					NotAvailable	0xFF00					
		24	1	8	<b>MaxMomentEngineOvrwrtTimeLimit (Maximum Momentary Override Time Limit)</b>		0.1	0	0 - 25	s	
					Error	0xFE					
					NotAvailable	0xFF					
		25	1	8	<b>RqstedSpeedCtrlRangeLowerLimit (Requested Speed Control Range Lower Limit)</b>		10	0	0 - 2500	rpm	
					Error	0xFE					
					NotAvailable	0xFF					
		26	1	8	<b>RqstedSpeedCtrlRangeUpperLimit (Requested Speed Control Range Upper Limit)</b>		10	0	0 - 2500	rpm	
					Error	0xFE					
					NotAvailable	0xFF					
		27	1	8	<b>RqstedTorqueCtrlRangeLowerLimit (Requested Torque Control Range Lower Limit)</b>		1	-125	-125 - 125	%	
					Error	0xFE					
					NotAvailable	0xFF					
		28	1	8	<b>RqstedTorqueCtrlRangeUpperLimit (Requested Torque Control Range Upper Limit)</b>		1	-125	-125 - 125	%	
					Error	0xFE					
					NotAvailable	0xFF					
		29	1	16	<b>EngExtRngReqSpeedCntrRngUpperLim (Requested Speed Control Extended Range Upper Limit)</b>		0.125	0	0 - 8031.88	rpm	1)
		31	1	16	<b>EngMomentOfInertia (Moment Of Inertia)</b>		0.004	0	0 - 257.02	kg-m <sup>2</sup>	2)
		33	1	16	<b>EngDefaultTorqueLimit (Default Torque Limit)</b>		1	0	0 - 64255	Nm	3)
		35	1	8	<b>SupportVariableRateTSC1Message (Support Variable Rate TSC1 Message)</b>		1	0	0 - 0	Bit map	4)
					Reserved	0x7F					
					20 ms transmission rate	0xBF					
					50 ms transmission rate	0xDF					
					100 ms transmission rate	0xEF					
					250 ms transmission rate	0xF7					
					500 ms transmission rate	0xFB					
					750 ms transmission rate	0xFD					
					1000 ms transmission rate	0xFE					
					NotAvailable	0xFF					
		36	1	8	<b>SupportTSC1ControlPurposeGroup1 (Support TSC1 Control Purpose Group 1)</b>		1	0	0 - 0	Bit map	5)
					Reserved	0x7F					
					Reserved	0xBF					
					Reserved	0xDF					
					Reserved	0xEF					
					Road Speed Governor	0xF7					
					PTO Governor	0xFB					
					Cruise Control	0xFD					
					Accelerator Pedal/Operator Selection	0xFE					
					NotAvailable	0xFF					
		37	1	8	<b>SupportTSC1ControlPurposeGroup2 (Support TSC1 Control Purpose Group 2)</b>		1	0	0 - 0	Bit map	6)
					Reserved	0x7F					

					Reserved	0xBF					
					Reserved	0xDF					
					Reserved	0xEF					
					Road Speed Governor	0xF7					
					PTO Governor	0xFB					
					Cruise Control	0xFD					
					Accelerator Pedal/Operator Selection	0xFE					
					NotAvailable	0xFF					
		38	1	8	<b>SupportTSC1ControlPurposeGroup3 (Support TSC1 Control Purpose Group 3)</b>		1	0	0 - 0	Bit map	7)
					Reserved	0x7F					
					Reserved	0xBF					
					Reserved	0xDF					
					Reserved	0xEF					
					Road Speed Governor	0xF7					
					PTO Governor	0xFB					
					Cruise Control	0xFD					
					Accelerator Pedal/Operator Selection	0xFE					
					NotAvailable	0xFF					
		39	1	8	<b>SupportTSC1ControlPurposeGroup4 (Support TSC1 Control Purpose Group 4)</b>		1	0	0 - 0	Bit map	8)
					Reserved	0x7F					
					Reserved	0xBF					
					Reserved	0xDF					
					Reserved	0xEF					
					Road Speed Governor	0xF7					
					PTO Governor	0xFB					
					Cruise Control	0xFD					
					Accelerator Pedal/Operator Selection	0xFE					
					NotAvailable	0xFF					

Note 1) Not sent by Scania engines, S6 and S7.

Note 2) Not sent by Scania engines, S6 and S7.

Note 3) Not sent by Scania engines, S6 and S7.

Note 4) This byte not sent by EMS S6 and S7. Signal is 'bit-mapped'. BitPos, Transmission Rate; 1, 1000 ms; 2, 750 ms; 3, 500 ms; 4, 250 ms; 5, 100 ms; 6, 50 ms; 7, 20 ms; 8, Reserved; Where 0=tx rate supported and 1=tx rate NOT supported.

Note 5) This byte not sent by EMS S6 and S7. Signal is 'bit-mapped'. BitPos, CP Desc; 1, AccPed/OpSel; 2, CC; 3, PTO Gov; 4, RoadSpeed Gov; 5, Res; 6, Res; 7, Res; 8, Res;. Where 0 = Control Purpose is supported and 1 = Control Purpose is not supported.

Note 6) This byte not sent by EMS S6 and S7. Signal is 'bit-mapped'. BitPos, CP Desc; 1, AccPed/OpSel; 2, CC; 3, PTO Gov; 4, RoadSpeed Gov; 5, Res; 6, Res; 7, Res; 8, Res;. Where 0 = Control Purpose is supported and 1 = Control Purpose is not supported.

Note 7) This byte not sent by EMS S6 and S7. Signal is 'bit-mapped'. BitPos, CP Desc; 1, AccPed/OpSel; 2, CC; 3, PTO Gov; 4, RoadSpeed Gov; 5, Res; 6, Res; 7, Res; 8, Res;. Where 0 = Control Purpose is supported and 1 = Control Purpose is not supported.

Note 8) This byte not sent by EMS S6 and S7. Signal is 'bit-mapped'. BitPos, CP Desc; 1, AccPed/OpSel; 2, CC; 3, PTO Gov; 4, RoadSpeed Gov; 5, Res; 6, Res; 7, Res; 8, Res;. Where 0 = Control Purpose is supported and 1 = Control Purpose is not supported.

## 2.4.3.42 EngineFluidLevPres (Engine Fluid Level/Pressure 1) - K

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/proprietary
18FEEF27	500	500	00FEEF	6	Cyclic	0	0	EF	27		Std

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	8	<b>FuelDeliveryPressure (Fuel Delivery Pressure)</b>		4	0	0 - 1000	kPa	
	X				Error	0xFE00					
	X				NotAvailable	0xFF00					
		2	1	8	<b>EngExCrankcaseBlowbyPress (Extended Crankcase Blowby Pressure)</b>		0.05	0	0 - 12.5	kPa	
					Error	0xFE					
					NotAvailable	0xFF					
	X	3	1	8	<b>EngineOilLevel (Engine Oil Level)</b>		0.4	0	0 - 100	%	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
		4	1	8	<b>EngineOilPressure (Engine Oil Press)</b>		4	0	0 - 1000	kPa	
					Error	0xFE					
					NotAvailable	0xFF					
		5	1	16	<b>CrankcasePressure (Crankcase Pressure)</b>		0.0078125	-250	-250 - 251.99	kPa	
					Error	0xFE00					
					NotAvailable	0xFF00					
		7	1	8	<b>CoolantPressure (Coolant Pressure)</b>		2	0	0 - 500	kPa	
					Error	0xFE00					
					NotAvailable	0xFF00					
	X	8	1	8	<b>CoolantLevel (Coolant Level)</b>		0.4	0	0 - 100	%	
	X				Error	0xFE					
	X				NotAvailable	0xFF					



### 2.4.3.43 EngineHoursRevolutions (Engine Hours, Revolutions) - E

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/proprietary
18FEE500	1000	1000	00FEE5	6	Cyclic	0	0	E5	00		Std

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	32	<b>TotalEngineHours (Total Engine Hours)</b>		0.05	0	0 - 210554060.75	hr	
	X				Error	0xFE0000 00					
	X				NotAvailable	0xFF0000 00					
		5	1	32	<b>TotalEngineRevolutions (Total Engine Revolutions)</b>		1000	0	0 - 4211081215000	r	
					Error	0xFE0000 00					
					NotAvailable	0xFF0000 00					



## 2.4.3.44 EngineTemp (Engine Temperature 1) - E

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/proprietary
18FEEE00	1000	1000	00FEEE	6	Cyclic	0	0	EE	00		Std

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	8	<b>EngineCoolantTemperature (Engine Coolant Temperature)</b>		1	-40	-40 - 210	deg	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
		2	1	8	<b>FuelTemperature (Fuel Temperature)</b>		1	-40	-40 - 210	deg	
					Error	0xFE					
					NotAvailable	0xFF					
		3	1	16	<b>EngineOilTemperature (Engine Oil Temperature)</b>		0.03125	-273	-273 - 1735	deg	
					Error	0xFE00					
					NotAvailable	0xFF00					
		5	1	16	<b>TurboOilTemperature (Turbo Oil Temperature)</b>		0.03125	-273	-273 - 1735	deg	
					Error	0xFE00					
					NotAvailable	0xFF00					
		7	1	8	<b>EngineIntercoolerTemperature (Engine Intercooler Temp)</b>		1	-40	-40 - 210	deg	
					Error	0xFE					
					NotAvailable	0xFF					
		8	1	8	<b>EngineIntercoolerThermOpening (Engine Intercooler Thermostat Opening)</b>		0.4	0	0 - 100	%	
					Error	0xFE					
					NotAvailable	0xFF					

**2.4.3.45 ERC1 (Electronic Retarder Controller 1) - RD**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18F00010	100	100	00F000	6	Cyclic	0	0	00	10		Std



## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	4	<b>EngineRetarderTorqueMode (Engine and Retarder Torque Mode)</b>		1	0	0 - 15		
	X				No request (default mode)	0x00					
	X				Operator selection	0x01					
	X				Cruise Control	0x02					
	X				PTO Governor	0x03					
	X				Road Speed Governing	0x04					
	X				ASR Control	0x05					
	X				Transmission Control	0x06					
	X				ABS Control	0x07					
	X				Torque Limiting	0x08					
	X				High Speed Governor	0x09					
	X				Brake System	0x0A					
	X				Remote accelerator	0x0B					
	X				NotDefined	0x0C					
	X				White smoke limiting	0x0D					
	X				Other	0x0E					
	X				TakeNoAction	0x0F					
	X	1	5	2	<b>RetarderEnableBrakeAssistSwth (Retarder Enable - Brake Assist Switch)</b>		1	0	0 - 3		
	X				RetarderBrakeAssistDisabled	0x00					
	X				RetarderBrakeAssistEnabled	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
		1	7	2	<b>RetarderEnableShiftAssistSwth (Retarder Enable - Shift Assist Switch)</b>		1	0	0 - 3		
					RetarderShiftAssistDisabled	0x00					
					RetarderShiftAssistEnabled	0x01					
					Error	0x02					
					NotAvailable	0x03					
	X	2	1	8	<b>ActualRetarderPercentTorque (Actual Retarder Percent Torque)</b>		1	-125	-125 - 125	%	1)
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	3	1	8	<b>IntendedRetarderPercentTorque (Intended Retarder Percent Torque)</b>		1	-125	-125 - 125	%	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	4	1	2	<b>EngineCoolantLoadIncrease (Engine Coolant Load Increase)</b>		1	0	0 - 3		
	X				NoEngineCoolantLoadIncrease	0x00					
	X				EngineCoolantLoadIncrease	0x01					
	X				Reserved	0x02					
	X				TakeNoAction	0x03					
		4	3	2	<b>RetarderRqingBrakeLight (Retarder Requesting Brake Light)</b>		1	0	0 - 3		
					NotActive	0x00					
					Active	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		4	5	2	<b>RetarderRoadSpeedLimitSwitch (Retarder Road Speed Limit Switch)</b>		1	0	0 - 3		

					Road speed limiting by retarder is disabled	0x00					
					Road speed limiting by retarder is enabled. The road speed that the retarder will limit will be determined when the switch transitions from 00 to 01	0x01					
					Error	0x02					
					NotAvailable	0x03					
		4	7	2	<b>RetarderRoadSpeedExceededStatus (Retarder Road Speed Exceeded Status)</b>		1	0	0 - 3		
					Road speed limiting by retarder is disabled	0x00					
					Road speed limiting by retarder is enabled. The road speed that the retarder will limit will be determined when the switch transitions from 00 to 01	0x01					
					Error	0x02					
					NotAvailable	0x03					
	X	5	1	8	<b>SAofControllingDevice (Source Address Of Controlling Device For Retarder Control)</b>		1	0	0 - 253		
	X				Error	0xFE					
	X				TakeNoAction	0xFF					
	X	6	1	8	<b>DrvrsDmandRetarderPercentTorque (Drivers Demand Retarder Percent Torque)</b>		1	-125	-125 - 125	%	
	X	7	1	8	<b>RetarderSelectionNonEng (Retarder Selection Non Engine)</b>		0.4	0	0 - 100	%	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	8	1	8	<b>ActlMxAvlblRtarderPercentTorque (Actual Max Available Retarder Percent Torque)</b>		1	-125	-125 - 125	%	

Note 1) 0%=> retarder not braking, <0%=>retarder braking

**2.4.3.46 ETC1 (Electronic Transmission Controller 1) - CV**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
0CF00243	10	10	00F002	3	Cyclic	0	0	02	43		Std



## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
		1	1	2	<b>DrivelineEngaged (Driveline Engaged)</b>		1	0	0 - 3		
					DrivelineDisengaged	0x00					
					DrivelineEngaged	0x01					
					Error	0x02					
					NotAvailable	0x03					
	X	1	3	2	<b>TorqueConverterLockupEngaged (Torque Converter Lockup Engaged)</b>		1	0	0 - 3		
	X				TorqueConverterLockupDisengaged	0x00					
	X				TorqueConverterLockupEngaged	0x01					
	X				Error	0x02					
	X				Not Available	0x03					
		1	5	2	<b>ShiftInProcess (Shift In Process)</b>		1	0	0 - 3		
					ShiftIsNotInProcess	0x00					
					ShiftInProcess	0x01					
					Error	0x02					
					NotAvailable	0x03					
		1	7	2	<b>TransTqCnvLockupTransitInProcess (Transmission Torque Converter Lockup Transition In Process)</b>		1	0	0 - 3		
					Transition is not in process	0x00					
					Transition is in process	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		2	1	16	<b>OutputShaftSpeed (Output Shaft Speed)</b>		0.125	0	0 - 8031.88	rpm	
					Error	0xFE00					
					NotAvailable	0xFF00					
		4	1	8	<b>PercentClutchSlip (Percent Clutch Slip)</b>		0.4	0	0 - 100	%	
					Error	0xFE					
					NotAvailable	0xFF					
		5	1	2	<b>MomentaryEngineOverspeedEnable (Momentary Overspeed Enable)</b>		1	0	0 - 3		
					MomentaryEngineOverspeedIsDisabled	0x00					
					MomentaryEngineOverspeedIsEnabled	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		5	3	2	<b>ProgressiveShiftDisable (Progressive Shift Disable)</b>		1	0	0 - 3		
					ProgressiveShiftIsNotDisabled	0x00					
					ProgressiveShiftIsDisabled	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		6	1	16	<b>InputShaftSpeed (Input Shaft Speed)</b>		0.125	0	0 - 8031.88	rpm	
					Error	0xFE00					
					NotAvailable	0xFF00					
		8	1	8	<b>SAofCntrlDevForTransControl (Source Address of Controlling Device for Transmission Control)</b>		1	0	0 - 255		



### 2.4.3.47 ETC1 (Electronic Transmission Controller 1) - T

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
0CF00203	10	10	00F002	3	Cyclic	0	0	02	03		Std



S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	2	<b>DrivelineEngaged (Driveline Engaged)</b>		1	0	0 - 3		
	X				DrivelineDisengaged	0x00					
	X				DrivelineEngaged	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	1	3	2	<b>TorqueConverterLockupEngaged (Torque Converter Lockup Engaged)</b>		1	0	0 - 3		
	X				TorqueConverterLockupDisengaged	0x00					
	X				TorqueConverterLockupEngaged	0x01					
	X				Error	0x02					
	X				Not Available	0x03					
	X	1	5	2	<b>ShiftInProcess (Shift In Process)</b>		1	0	0 - 3		
	X				ShiftIsNotInProcess	0x00					
	X				ShiftInProcess	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	1	7	2	<b>TransTqCnvLockupTransitInProcess (Transmission Torque Converter Lockup Transition In Process)</b>		1	0	0 - 3		
	X				Transition is not in process	0x00					
	X				Transition is in process	0x01					
	X				Reserved	0x02					
	X				TakeNoAction	0x03					
	X	2	1	16	<b>OutputShaftSpeed (Output Shaft Speed)</b>		0.125	0	0 - 8031.88	rpm	
	X				Error	0xFE00					
	X				NotAvailable	0xFF00					
		4	1	8	<b>PercentClutchSlip (Percent Clutch Slip)</b>		0.4	0	0 - 100	%	
					Error	0xFE					
					NotAvailable	0xFF					
	X	5	1	2	<b>MomentaryEngineOverspeedEnable (Momentary Overspeed Enable)</b>		1	0	0 - 3		
	X				MomentaryEngineOverspeedIsDisabled	0x00					
	X				MomentaryEngineOverspeedIsEnabled	0x01					
	X				Reserved	0x02					
	X				TakeNoAction	0x03					
	X	5	3	2	<b>ProgressiveShiftDisable (Progressive Shift Disable)</b>		1	0	0 - 3		
	X				ProgressiveShiftIsNotDisabled	0x00					
	X				ProgressiveShiftIsDisabled	0x01					
	X				Reserved	0x02					
	X				TakeNoAction	0x03					
	X	6	1	16	<b>InputShaftSpeed (Input Shaft Speed)</b>		0.125	0	0 - 8031.88	rpm	
	X				Error	0xFE00					
	X				NotAvailable	0xFF00					
	X	8	1	8	<b>SAofCntrlDevForTransControl (Source Address of Controlling Device for Transmission Control)</b>		1	0	0 - 255		



**2.4.3.48 ETC2 (Electronic Transmission Controller 2) - T**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/proprietary
18F00503	100	100	00F005	6	Cyclic	0	0	05	03		Std

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	8	<b>SelectedGear (Selected Gear, - rev, + forw, 0 neut, 126 park)</b>		1	-125	-125 - 125		
	X				Park	0xFB					
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	2	1	16	<b>ActualGearRatio (Actual Gear Ratio)</b>		0.001	0	0 - 64.255		
	X				Error	0xFE00					
	X				NotAvailable	0xFF00					
	X	4	1	8	<b>CurrentGear (Current Gear, - rev, + forw, 0 neut, 126 park)</b>		1	-125	-125 - 125	Gear	
	X				Park	0xFB					
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	5	1	16	<b>TransmissionRqstedRange (Transmission Requested Range)</b>		1	0	0 - 255	Ascii	1)
	X				Error	0x00					
	X				D	0x2044					
	X				N	0x204E					
	X				R	0x2052					
	X				NotAvailable	0xFFFF					
	X	7	1	16	<b>TransmissionCurrentRange (Transmission Current Range)</b>		1	0	0 - 255	Ascii	2)
	X				Error	0x00					
	X				D	0x2044					
	X				N	0x204E					
	X				R	0x2052					
	X				NotAvailable	0xFFFF					

Note 1) Signal contains two ascii signs (0-255 per byte).

Note 2) Signal contains two ascii signs (0-255 per byte).

**2.4.3.49 ETC7 (Electronic Transmission Controller 7) - T**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18FE4A03	100	100	00FE4A	6	Cyclic	0	0	4A	03		Std



## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
		1	1	2	<b>TransCurrentRangeDispBlankState (Transmission Current Range Display Blank State)</b>		1	0	0 - 3		
					NotBlanked	0x00					
					Blanked	0x01					
					Error	0x02					
					NotAvailable	0x03					
		1	3	2	<b>TransmissionServiceIndicator (Transmission Service Indicator)</b>		1	0	0 - 3		
					Transmission Service Indicator is off	0x00					
					Transmission Service Indicator is on continuously	0x01					
					Transmission Service Indicator is flashing	0x02					
					NotAvailable	0x03					
	X	1	5	2	<b>TransmReqRangeDispBlankState (Transmission Requested Range Display Blank State)</b>		1	0	0 - 3		
	X				Inactive	0x00					
	X				Active	0x01					
	X				Reserved	0x02					
	X				TakeNoAction	0x03					
	X	1	7	2	<b>TransmReqRangeDispFlashState (Transmission Requested Range Display Flash State)</b>		1	0	0 - 3		
	X				Inactive	0x00					
	X				Active	0x01					
	X				Reserved	0x02					
	X				TakeNoAction	0x03					
	X	2	1	2	<b>TransReadyForBrakeRelease (Transmission Ready For Brake Release)</b>		1	0	0 - 3		
	X				TransNotReadyForBrakeRelease	0x00					
	X				TransReadyForBrakeRelease	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	2	3	2	<b>ActiveShiftConsoleIndicator (Active Shift Console Indicator)</b>		1	0	0 - 3		
	X				Inactive	0x00					
	X				Active	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	2	5	2	<b>TransmissionEngineCrankEnable (Transmission Engine Crank Enable)</b>		1	0	0 - 3		
	X				CrankingDisabled	0x00					
	X				CrankingEnabled	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	2	7	2	<b>ShiftInhibitIndicator (Shift Inhibit Indicator)</b>		1	0	0 - 3		
	X				Inactive	0x00					
	X				Active	0x01					
	X				Reserved	0x02					
	X				TakeNoAction	0x03					



## External CAN Communication Specification

	X	3	1	2	<b>TransmissionMode4Indicator (Transmission Mode 4 Indicator)</b>		1	0	0 - 3		
	X				TransMode4NotActive	0x00					
	X				TransMode4Active	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
		3	3	2	<b>TransmissionMode3Indicator (Transmission Mode 3 Indicator)</b>		1	0	0 - 3		
					TransMode3NotActive	0x00					
					TransMode3Active	0x01					
					Error	0x02					
					NotAvailable	0x03					
	X	3	5	2	<b>TransmissionMode2Indicator (Transmission Mode 2 Indicator)</b>		1	0	0 - 3		
	X				TransMode2NotActive	0x00					
	X				TransMode2Active	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	3	7	2	<b>TransmissionMode1Indicator (Transmission Mode 1 Indicator)</b>		1	0	0 - 3		
	X				TransMode1NotActive	0x00					
	X				TransMode1Active	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	4	1	8	<b>TransRqcdGearFeedback (Transmission Requested Gear Feedback)</b>		1	-125	-125 - 125		
		5	1	2	<b>TransmissionMode5Indicator (Transmission Mode 5 Indicator)</b>		1	0	0 - 3		
					TransMode5NotActive	0x00					
					TransMode5Active	0x01					
					Error	0x02					
					NotAvailable	0x03					
		5	3	2	<b>TransmissionMode6Indicator (Transmission Mode 6 Indicator)</b>		1	0	0 - 3		
					TransMode6NotActive	0x00					
					TransMode6Active	0x01					
					Error	0x02					
					NotAvailable	0x03					
		5	5	2	<b>TransmissionMode7Indicator (Transmission Mode 7 Indicator)</b>		1	0	0 - 3		
					TransMode7NotActive	0x00					
					TransMode7Active	0x01					
					Error	0x02					
					NotAvailable	0x03					
		5	7	2	<b>TransmissionMode8Indicator (Transmission Mode 8 Indicator)</b>		1	0	0 - 3		
					TransMode8NotActive	0x00					
					TransMode8Active	0x01					
					Error	0x02					
					NotAvailable	0x03					
		6	1	2	<b>TransRevGearShiftInhibitStatus (Transmission Reverse Gear Shift Inhibit Status)</b>		1	0	0 - 3		
					Reverse gear shifts are currently allowed	0x00					
					Reverse gear shifts are currently inhibited	0x01					
					Error	0x02					
					NotAvailable	0x03					
		6	3	2	<b>TransmissionWarningIndicator (Transmission Warning Indicator)</b>		1	0	0 - 3		



### 2.4.3.50 FuelConsumption (Fuel Consumption (Liquid)) - E

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/proprietary
18FEE900	1000	1000	00FEE9	6	Cyclic	0	0	E9	00		Std

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
		1	1	32	<b>TripFuel (Trip Fuel)</b>		0.5	0	0 - 2.10554e+009	L	
					Error	0xFE0000 00					
					NotAvailable	0xFF0000 00					
	X	5	1	32	<b>TotalFuelUsed (Total Fuel Used)</b>		0.5	0	0 - 2105540607.5	L	1)
	X				Error	0xFE0000 00					
	X				NotAvailable	0xFF0000 00					

Note 1) This signal may not be available if a gas engine is used



### 2.4.3.51 FuelEconomy (Fuel Economy (Liquid)) - E

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/proprietary
18FEF200	100	100	00FEF2	6	Cyclic	0	0	F2	00		Std

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	16	<b>FuelRate (Fuel Rate)</b>		0.05	0	0 - 3212.75	L/h	1)
	X				Error	0xFE00					
	X				NotAvailable	0xFF00					
	X	3	1	16	<b>InstantaneousFuelEconomy (Instantaneous Fuel Economy)</b>		0.00195313	0	0 - 125.5	km/L	2)
	X				Infinite (e.g. during engine motoring). NOTE! Scania deviation from J1939	0xFAFF					
	X				Infinite (e.g. during engine motoring)	0xFB00					
	X				Error	0xFE00					
	X				NotAvailable	0xFF00					
		5	1	16	<b>AverageFuelEconomy (Average Fuel Economy)</b>		0.00195313	0	0 - 125.5	km/L	
					Error	0xFE00					
					NotAvailable	0xFF00					
		7	1	8	<b>ThrottlePosition (Throttle Position)</b>		0.4	0	0 - 100	%	
					Error	0xFE00					
					NotAvailable	0xFF00					

Note 1) This signal may not be available if a gas engine is used

Note 2) This signal may not be available if a gas engine is used

**2.4.3.52 GPM1 (General Purpose Message 1) - BCI**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/proprietary
18FF60E6	5000	5000	00FF60	6	Cyclic	0	0	60	E6		Prop

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	32	<b>ChassiNo (Chassi No)</b>		1	0	0 - 4211081215		1)
	X				Error	0xFE000000					
	X				NotAvailable	0xFF000000					
	X	5	1	10	<b>MeasuredSystemSupplyVoltage (Measured System Supply Voltage)</b>		0.1	0	0 - 50	V	2)
	X				Error	0x03FE					
	X				NotAvailable	0x03FF					
	X	6	5	4	<b>CalculatedGTWStatus (GTW Status)</b>		1	0	0 - 15		3)
	X				NoEstimationAvailable	0x00					
	X				LowQuality	0x01					
	X				NormalQuality	0x02					
	X				HighQuality	0x03					
	X				Not Used	0x04					
	X				Not Used	0x05					
	X				Not Used	0x06					
	X				Not Used	0x07					
	X				Not Used	0x08					
	X				Not Used	0x09					
	X				Not Used	0x0A					
	X				Not Used	0x0B					
	X				Not Used	0x0C					
	X				Not Used	0x0D					
	X				Error	0x0E					
	X				Not Available	0x0F					
	X	7	1	16	<b>CalculatedGTW (Calculated GTW)</b>		10	0	0 - 642550	kg	4)
	X				Error	0xFE00					
	X				NotAvailable	0xFF00					

Note 1) Chassi No. is used to send the, in the ECU, programmed Chassi No (part of the VIN) as a decimal value, figure by figure. Since the chassi no. is 7 figures long the first figure shall be set to a 0 (zero). So chassi no. 3465785 shall be sent as 03465785.

Note 2) Included for experimental use.

Note 3) GTW calculation quality indication

Note 4) This information shall NOT be used for any calculation that needs an exact value, this parameter only shows un-laden/semi-laden/laden vehicle.

**2.4.3.53 HiResVehicleDist (High Resolution Vehicle Distance) - TCO**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/proprietary
18FEC1EE	1000	1000	00FEC1	6	Cyclic	0	0	C1	EE		Std

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	32	<b>HighResolTotalVehicleDistance (High Resolution Vehicle Distance)</b>		0.005	0	0 - 21055406.075	km	
	X				Error	0xFE0000 00					
	X				NotAvailable	0xFF0000 00					
	X	5	1	32	<b>HighResolTripDistance (High Resolution Trip Distance)</b>		0.005	0	0 - 21055406.075	km	
	X				Error	0xFE0000 00					
	X				NotAvailable	0xFF0000 00					



**2.4.3.54 ICLInformationProprietary (ICLInformationProprietary) - ICL**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18FFD517	100	1000	00FFD5	6	On Change	0	0	D5	17		Prop

The message shall be transmitted every 1000ms and on change of state of the parameter NightPanelRequest.



## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	8	<b>LanguageNo (Language Nr)</b>		1	0	0 - 0		
	X				English	0x00					
	X				German	0x01					
	X				French	0x02					
	X				Dutch	0x03					
	X				Spanish	0x04					
	X				Portuguese Portugal	0x05					
	X				Italian	0x06					
	X				Danish	0x07					
	X				Norwegian	0x08					
	X				Swedish	0x09					
	X				Finnish	0x0A					
	X				Polish	0x0B					
	X				Czech	0x0C					
	X				Russian	0x0D					
	X				Chinese Traditional	0x0E					
	X				Arabic	0x0F					
	X				Turkish	0x10					
	X				Thai	0x11					
	X				Persian	0x12					
	X				Korean	0x13					
	X				Bahasa Malaysia	0x14					
	X				Hebrew	0x15					
	X				Japanese	0x16					
	X				Chinese Simplified	0x17					
	X				Portuguese Brazil	0x18					
	X				Hungarian	0x19					
	X				Slovenian	0x1A					
	X				Croatian	0x1B					
	X				Serbian	0x1C					
	X				Macedonian	0x1D					
	X				Romanian	0x1E					
	X				Slovak	0x1F					
	X				Bulgarian	0x20					
	X				Estonian	0x21					
	X				Latvian	0x22					
	X				Lithuanian	0x23					
	X				Reserved	0xFE					
	X				TakeNoAction	0xFF					
	X	2	1	2	<b>TemperatureScale (Temperature Scale)</b>		1	0	0 - 3		
	X				Celsius	0x00					
	X				Fahrenheit	0x01					
	X				Reserved	0x02					
	X				TakeNoAction	0x03					
	X	2	3	2	<b>SpeedScale (Speed Scale)</b>		1	0	0 - 3		
	X				Kph	0x00					
	X				Mph	0x01					
	X				Reserved	0x02					
	X				TakeNoAction	0x03					



## External CAN Communication Specification

		2	5	2	<b>DAUStatus ()</b>		1	0	0 - 3		
					Fully operational	0x00					
					Future use	0x01					
					Error	0x02					
					NotAvailable	0x03					
		2	7	2	<b>NightPanelRequest (NightPanelRequest)</b>		1	0	0 - 0		
					Disabled	0x00					
					Enabled	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
	X	3	1	16	<b>AuxiliaryAmbientAirTemperature ()</b>		0.03125	-273	-273 - 1734.96875	deg	
	X				Error	0xFE00					
	X				NotAvailable	0xFF00					
		5	1	3	<b>SoftButtonCCEnable (Soft Button CC Enable)</b>		1	0	0 - 7		
					NotEnabled	0x00					
					CCEnabled	0x01					
					AICCEnabled	0x02					
					Error	0x06					
					NotAvailable	0x07					
		5	4	3	<b>DPFRegenerationRequest (DPFRegenerationRequest)</b>		1.0	0	0 - 7		
					No request	0x00					
					Activation request	0x01					
					Deactivation request	0x02					
					Take no action	0x07					
		5	7	2	<b>WhiteSmokeLimiterSetting (White Smoke Limiter Setting)</b>		1.0	0	0 - 3		
					Off	0x00					
					Auto	0x01					
					Reserved	0x02					
					Don't care	0x03					
		6	1	2	<b>AttentionSupportState (Attention Support Activation Status)</b>		1.0	0.0	0 - 3		
					NotActivated	0x00					
					Activated	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		6	3	4	<b>PerformanceMode (Performance Mode)</b>		1	0	0 - 15		
					StandardMode	0x00					
					EconomyMode	0x01					
					PowerMode	0x02					
					OffroadMode	0x03					
					IndividualMode1	0x0C					
					IndividualMode2	0x0D					
					Error	0x0E					
					NotAvailable	0x0F					
		6	7	2	<b>RainSensorActivationSetting (RainSensorActivationSetting)</b>		1.0	0.0	0 - 3		
					NotActivated	0x00					
					Activated	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		7	1	2	<b>LDWDriverActivityFilter (LDWDriverActivityFilter)</b>		1.0	0.0	0 - 3		
					Off	0x00					

					On	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		7	3	3	<b>LDWWarningSensitivity (LDWWarningSensitivity)</b>		1.0	0.0	0 - 7		
					Early	0x00					
					Normal	0x01					
					Late	0x02					
					Reserved	0x06					
					TakeNoAction	0x07					
		7	6	3	<b>CCAPMinSpeedSetting (CCAPMinSpeedSetting)</b>		1.0	0.0	0 - 5		
					Default	0x00					
					Level 1	0x01					
					Level 2	0x02					
					TakeNoAction	0x07					
		8	1	2	<b>BOLActive (BOL Active)</b>		1.0	0.0	0 - 3		
					False	0x00					
					True	0x01					
					Error	0x02					
					NotAvailable	0x03					
		8	5	2	<b>LDWActiveSteeringState (Lane Departure Warning setting)</b>		1.0	0.0	0 - 3		
					NotActivated	0x00					
					Activated	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		8	7	2	<b>SideAssistState (Sode Assist setting)</b>		1.0	0.0	0 - 3		
					NotActivated	0x00					
					Activated	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					

**2.4.3.55 InletExhaustCond (Inlet/Exhaust Conditions 1) - E**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/proprietary
18FEF600	500	500	00FEF6	6	Cyclic	0	0	F6	00		Std

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
		1	1	8	<b>ParticulateTrapInletPressure (Particulate Trap Inlet Pressure)</b>		0.5	0	0 - 125	kPa	
					Error	0xFE					
					NotAvailable	0xFF					
	X	2	1	8	<b>BoostPressure (Boost Press)</b>		2	0	0 - 500	kPa	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
		3	1	8	<b>IntakeManifoldTemperature (Intake Manifold Temperature)</b>		1	-40	-40 - 210	deg	
					Error	0xFE					
					NotAvailable	0xFF					
		4	1	8	<b>AirInletPressure (Air Inlet Pressure)</b>		2	0	0 - 500	kPa	
					Error	0xFE					
					NotAvailable	0xFF					
		5	1	8	<b>AirFilterDifferentialPressure (Air Filter Differential Pressure)</b>		0.05	0	0 - 12.5	kPa	
					Error	0xFE					
					NotAvailable	0xFF					
		6	1	16	<b>ExhaustGasTemperature (Exhaust Gas Temp)</b>		0.03125	-273	-273 - 1735	deg	
					Error	0xFE00					
					NotAvailable	0xFF00					
		8	1	8	<b>CoolantFilterDiffPressure (Coolant Filter Differential Pressure)</b>		0.5	0	0 - 125	kPa	
					Error	0xFE					
					NotAvailable	0xFF					

**2.4.3.56 PTOInformationProp (PTO Information Proprietary) - BCI**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18FF90E6	250	250	00FF90	6	Cyclic	0	0	90	E6		Prop



## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	2	<b>PTO_ED1 (PTO_ED 1)</b>		1	0	0 - 3		
	X				NotEngaged	0x00					
	X				Engaged	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	1	3	2	<b>PTO_ED2 (PTO_ED 2)</b>		1	0	0 - 3		
	X				NotEngaged	0x00					
	X				Engaged	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	1	5	2	<b>PTO_AL1 ()</b>		1	0	0 - 0		
	X				NotEngaged	0x00					
	X				Engaged	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	1	7	2	<b>PTO_AL2 ()</b>		1	0	0 - 0		
	X				NotEngaged	0x00					
	X				Engaged	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	2	1	2	<b>PTO_EK1 (PTO_EK 1)</b>		1	0	0 - 3		
	X				NotEngaged	0x00					
	X				Engaged	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	2	3	2	<b>PTO_EK2 (PTO_EK 2)</b>		1	0	0 - 3		
	X				NotEngaged	0x00					
	X				Engaged	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	3	1	2	<b>PTO_EG1 (PTO_EG 1)</b>		1	0	0 - 3		
	X				NotEngaged	0x00					
	X				Engaged	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	3	3	2	<b>PTO_EG2 (PTO_EG 2)</b>		1	0	0 - 3		
	X				NotEngaged	0x00					
	X				Engaged	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
		3	5	2	<b>PTO_EG3 (PTO_EG3)</b>		1	0	0 - 3		
					NotEngaged	0x00					
					Engaged	0x01					

					Error	0x02					
					NotAvailable	0x03					
	X	4	1	2	<b>PTO_AWD1 (PTO_AWD 1)</b>		1	0	0 - 3		
	X				NotEngaged	0x00					
	X				Engaged	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	4	3	2	<b>PTO_AWD2 (PTO_AWD 2)</b>		1	0	0 - 3		
	X				NotEngaged	0x00					
	X				Engaged	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	7	1	2	<b>PTO_Engaged (PTO_Engaged)</b>		1	0	0 - 3		1)
	X				PTONotEngaged	0x00					
	X				PTOEngaged	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	7	3	2	<b>PTO_SplitShaft (PTO Split Shaft)</b>		1	0	0 - 3		
	X				NotEngaged	0x00					
	X				Engaged	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	8	1	4	<b>PTOClutchActivationRequest (PTO Clutch Activation Request)</b>		1	0	0 - 15		
	X				NoControl	0x00					
	X				OpenClutch	0x01					
	X				ClutchActuation	0x02					
	X				Close	0x03					
	X				CloseSlow	0x04					
	X				StopLayshaft	0x05					
	X				ClutchDownRequest	0x06					
	X				Reserved	0x07					
	X				Reserved	0x08					
	X				Reserved	0x09					
	X				Reserved	0x0A					
	X				Reserved	0x0B					
	X				Reserved	0x0C					
	X				Reserved	0x0D					
	X				Reserved	0x0E					
	X				TakeNoAction	0x0F					

Note 1) OR-logic for all PTOs



**2.4.3.57 RetarderFluids (Retarder fluids) - RD**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/proprietary
18FEFB10	1000	1000	00FEFB	6	Cyclic	0	0	FB	10		Std

Only if retarder is available

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
		1	1	8	<b>HydraulicRetarderPressure (Hydraulic Retarder Pressure)</b>		16	0	0 - 4000	kPa	
					Error	0xFE					
					NotAvailable	0xFF					
	X	2	1	8	<b>HydraulicRetarderOilTemp (Hydraulic Retarder Oil Temp)</b>		1	-40	-40 - 210	deg	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
		3	1	2	<b>DrivelineRetarderOverheatIndic (Driveline Retarder Overheat Indicator)</b>		1	0	0 - 3		
					Driveline Retarder Overheat Indicator is off	0x00					
					Driveline Retarder Overheat Indicator is on continuously	0x01					
					Driveline Retarder Overheat Indicator is flashing	0x02					
					NotAvailable	0x03					

**2.4.3.58 ScaniaVehicleStatusMessage1 (Scania Vehicle Status Message 1) - BCI**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18FF27E6	100	100	00FF27	6	Cyclic	0	0	27	E6		Prop



## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	2	<b>BusStopBrakeActivated (Bus Stop Brake Activated)</b>		1	0	0 - 3		
	X				BrakeNotActive	0x00					
	X				BrakeActive	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	1	3	2	<b>AutomaticHillHoldActivated (Automatic Hill Hold Activated)</b>		1	0	0 - 3		
	X				AutomaticHillHoldNotActivated	0x00					
	X				AutomaticHillHoldActivated	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	1	7	2	<b>DriverAreaSensorStatus (Driver Area Sensor Status)</b>		1	0	0 - 3		
	X				Active	0x00					
	X				NotActive	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	2	1	2	<b>ImminentBatteryDisconnection (Imminent Battery Disconnection)</b>		1	0	0 - 3		1)
	X				False	0x00					
	X				True	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	2	3	2	<b>BattMasterRelayOffIntended (Battery Master Relay Off Intended)</b>		1	0	0 - 3		
	X				Battery Master Relay Hold Off Not Intended	0x00					
	X				Battery Master Relay Hold Off Intended	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	2	5	2	<b>IgnitionRelayHold (Ignition Relay Hold)</b>		1	0	0 - 3		
	X				NotActive	0x00					
	X				Active	0x01					
	X				Reserved	0x02					
	X				TakeNoAction	0x03					
	X	2	7	2	<b>IgnitionKeySwitchStatus (Ignition Key Switch Status)</b>		1	0	0 - 3		
	X				Off	0x00					
	X				On	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	3	1	2	<b>EXTSwitchOn (EXT Switch On)</b>		1	0	0 - 0		
	X				EXTSwitchNotOn	0x00					
	X				EXTSwitchOn	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	3	3	2	<b>EmergencySwitchActivated (Emergency Switch Activated)</b>		1	0	0 - 3		
	X				NotActive	0x00					
	X				Active	0x01					

	X				Error	0x02					
	X				NotAvailable	0x03					
	X	3	5	2	<b>PassengerAreaFireWarning (Passenger Area Fire Warning)</b>		1	0	0 - 0		2)
	X				PassengerAreaFireAlarmNotActive	0x00					
	X				PassengerAreaFireAlarmActive	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	3	7	2	<b>EngineFireWarning (Engine Fire Warning)</b>		1	0	0 - 3		
	X				NotActive	0x00					
	X				Active	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	4	1	2	<b>BRBLowSpeedStatus (Body Requested Braking Low Speed Status)</b>		1	0	0 - 3		
	X				NotAllowed	0x00					
	X				Allowed	0x01					
	X				Active	0x02					
	X				Error	0x03					
	X	4	3	2	<b>BRBHighSpeed1Status (Body Requested Braking Highspeed1 Status)</b>		1	0	0 - 3		
	X				NotAllowed	0x00					
	X				Allowed	0x01					
	X				Active	0x02					
	X				Error	0x03					
	X	4	5	2	<b>BRBHighSpeed2Status (Body Requested Braking Highspeed2 Status)</b>		1	0	0 - 3		
	X				NotAllowed	0x00					
	X				Allowed	0x01					
	X				Active	0x02					
	X				Error	0x03					
	X	4	7	2	<b>LightCheckActivated (Light Check Activated)</b>		1	0	0 - 3		
	X				LightCheckNotActivated	0x00					
	X				LightCheckActivated	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					

Note 1) Signal active when a maneuver switch for the battery master switch has been activated and power supply disconnection is imminent (<5s). Battery disconnection may be aborted if the maneuver switch is deactivated.

Note 2) BCI preliminary.

**2.4.3.59 ScaniaVehicleStatusMessage2 (Scania Vehicle Status Message 2) - BCI**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18FF28E6	100	100	00FF28	6	Cyclic	0	0	28	E6		Prop



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S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	2	<b>ParkingBrakeApplied (Parking Brake Applied)</b>		1	0	0 - 0		
	X				False	0x00					
	X				True	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	1	3	2	<b>RetarderActivated (Retarder Activated)</b>		1	0	0 - 3		
	X				RetarderNotActivated	0x00					
	X				RetarderActivated	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	1	5	2	<b>NeutralPositionRequested (Neutral Position Requested)</b>		1	0	0 - 0		
	X				NeutralPositionNotRequested	0x00					
	X				NeutralPositionRequested	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	1	7	2	<b>GearboxInNeutralPosition (Gearbox In Neutral Position)</b>		1	0	0 - 0		
	X				NotInNeutral	0x00					
	X				InNeutral	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	2	1	2	<b>ClutchOpen (Clutch Open)</b>		1	0	0 - 0		
	X				ClutchNotOpen	0x00					
	X				ClutchOpen	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	2	3	2	<b>ClutchClosed (Clutch Closed)</b>		1	0	0 - 0		
	X				False	0x00					
	X				True	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	2	5	2	<b>PowertrainEngaged (Powertrain Engaged)</b>		1	0	0 - 0		
	X				PowertrainNotEngaged	0x00					
	X				PowertrainEngaged	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	2	7	2	<b>DirectGearEngaged (Direct Gear Engaged)</b>		1	0	0 - 0		
	X				NotEngaged	0x00					
	X				Engaged	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	3	1	2	<b>ForwardGearRequested (Forward Gear Requested)</b>		1	0	0 - 0		
	X				ForwardGearNotRequested	0x00					
	X				ForwardGearRequested	0x01					



## External CAN Communication Specification

X				Error	0x02					
X				NotAvailable	0x03					
X	3	3	2	<b>ForwardGearEngaged (Forward Gear Engaged)</b>		1	0	0 - 0		
X				NotEngaged	0x00					
X				Engaged	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
X	3	5	2	<b>ReverseGearRequested (Reverse Gear Requested)</b>		1	0	0 - 0		
X				ReverseGearNotRequested	0x00					
X				ReverseGearRequested	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
X	3	7	2	<b>ReverseGearEngaged (Reverse Gear Engaged)</b>		1	0	0 - 0		
X				ReverseGearNotEngaged	0x00					
X				ReverseGearEngaged	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
X	4	1	2	<b>RotSpeedOutputShaftOver50Rpm (Rotation Speed Output Shaft Over 50 Rpm)</b>		1	0	0 - 0		
X				False	0x00					
X				True	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
X	4	3	2	<b>EngineSpeedOver300Rpm (Engine Speed Over 300 Rpm)</b>		1	0	0 - 0		
X				False	0x00					
X				True	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
X	4	5	2	<b>VehicleSpeedFixedValue5kph (Vehicle Speed Fixed Value 5 kph)</b>		1	0	0 - 0		
X				False	0x00					
X				True	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
X	4	7	2	<b>PowertrainDisengaged (Powertrain Disengaged)</b>		1	0	0 - 0		
X				PowertrainNotDisengaged	0x00					
X				PowertrainDisengaged	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
X	5	1	2	<b>LowPressureInServiceBrakeCircuit (Low Pressure In Service Brake Circuit)</b>		1	0	0 - 0		
X				NotLowBrakeCircuitPressure	0x00					
X				LowBrakeCircuitPressure	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
X	5	3	2	<b>LowPressInParkOrTrailBrkCircuit (Low Pressure In Parking Or Trailer Brake Circuit)</b>		1	0	0 - 0		
X				NotLowBrakeCircuitPressure	0x00					
X				LowBrakeCircuitPressure	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
X	5	5	2	<b>ExternalControlActive (External Control Active)</b>		1	0	0 - 3		

X				ExternalControlNotActive	0x00					
X				ExternalControlActive	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
X	5	7	2	<b>EngineTorqueLimitActive (Engine Torque Limit Active)</b>		1.0	0.0	0 - 3		
X				EngineTorqueLimitNotActive	0x00					
X				EngineTorqueLimitActive	0x01					
X				Error	0x02					
X				NotAvailable	0x03					
X	6	1	16	<b>VehicleSpeedLimiter (Vehicle Speed Limiter)</b>		0.00390625	0	0 - 250.99609375	km/h	
X				NoRequest	0xFB00					
X				Error	0xFE00					
X				NotAvailable	0xFF00					
	8	1	4	<b>ActiveEngineControlModule (Active Engine Control Module)</b>		1.0	0.0	0 - 13		
				NoActiveModule	0x00					
				Module1Active	0x01					
				Module2Active	0x02					
				Module3Active	0x03					
				Module4Active	0x04					
				Error	0x0E					
				NotAvailable	0x0F					
	8	5	2	<b>EngineSpeedControlActive (Engine Speed Control Active)</b>		1.0	0.0	0 - 3		
				EngineSpeedControlNotActive	0x00					
				EngineSpeedControlActive	0x01					
				Error	0x02					
				NotAvailable	0x03					



**2.4.3.60 ScaniaVehicleStatusMessage3 (Scania Vehicle Status Message 3) - BCI**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18FF26E6	100	100	00FF26	6	Cyclic	0	0	26	E6		Prop



S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	2	<b>EmergencyStopAutoKneelingStatus (Emergency Stop Auto Kneeling Status)</b>		1	0	0 - 3		
	X				NotActive	0x00					
	X				Active	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	1	3	2	<b>KneelingStatus (Kneeling Status)</b>		1	0	0 - 0		
	X				KneelingNotActivated	0x00					
	X				KneelingActivated	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	1	5	2	<b>LevellingExceptKneelingStatus (Levelling Except Kneeling Status)</b>		1	0	0 - 0		
	X				LevellingNotActivated	0x00					
	X				LevellingActivated	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	1	7	2	<b>AutomaticKneelingStatus (Automatic Kneeling Status)</b>		1	0	0 - 3		
	X				Disabled	0x00					
	X				Enabled	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	2	1	2	<b>SuspensionLevelControlInhibitStatus (Suspension Level Control Inhibit Status)</b>		1	0	0 - 0		
	X				LevelControlNotInhibited	0x00					
	X				LevelControlInhibited	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	2	3	2	<b>AutomaticLvlChangeProhibitStatus (Automatic Level Change Prohibit Status)</b>		1	0	0 - 0		
	X				AutomaticProhibitNotActivated	0x00					
	X				AutomaticProhibitActivated	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	2	5	2	<b>SidewalkDetectionStatus (Sidewalk Detection Status)</b>		1	0	0 - 0		
	X				SidewalkDetectionNotActivated	0x00					
	X				SidewalkDetectionActivated	0x01					
	X				SidewalkDetectionNotPossible	0x02					
	X				NotAvailable	0x03					
	X	2	7	2	<b>OverloadWeightWarningStatus (Overload Weight Warning Status)</b>		1	0	0 - 3		
	X				OverloadWeightWarningNotActivated	0x00					
	X				OverloadWeightWarningActivated	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	3	1	2	<b>DoorOpeningAllowedStatus (Door Opening Allowed Status)</b>		1	0	0 - 0		
	X				DoorOpeningNotAllowed	0x00					
	X				DoorOpeningAllowed	0x01					



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	X				Error	0x02					
	X				NotAvailable	0x03					
		3	3	4	<b>ActualVehicleLevel (ActualVehicleLevel)</b>		1.0	0.0	0 - 13		
					LevelNotSpecified	0x00					
					NormalLevel	0x01					
					AlternativeLevel	0x02					
					ExhaustedBellows	0x03					
					Error	0x0E					
					NotAvailable	0x0F					

## 2.4.3.61 SOFT (Software Identification) - BCI

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/proprietary
18FEDAE6	0	0	00FEDA	6	On Request	0	0	DA	E6		Std

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	8	<b>NmbrOfSftwrIdentificationFields (NmbrOfSftwrIdentificationFields)</b>		1	0	0 - 250	steps	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	2	1	56	<b>SoftwareIdentification (Software Identification)</b>		1	0	0 - 0	ASCII	1)
	X				Error	0xFE					
	X				NoAvailable	0xFF					

Note 1) Variable - up to 200 bytes, followed by the ASCII character '\*' reserved as a delimiter.

**2.4.3.62 TCO1 (Tachograph) - TCO**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
0CFE6CEE	20	20	00FE6C	3	Cyclic	0	0	6C	EE		Std

Se ISO16844 for information about TCO1. ISO16844-4 for CAN interface, ISO16844-7 for parameter specification.



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S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
		1	1	3	<b>Driver1WorkingState (Driver 1 Working State)</b>		1	0	0 - 7		
					Rest	0x00					
					Availability	0x01					
					Work	0x02					
					Drive	0x03					
					101Reserved	0x04					
					Error	0x06					
					NotAvailable	0x07					
		1	4	3	<b>Driver2WorkingState (Driver 2 Working State)</b>		1	0	0 - 7		
					Rest	0x00					
					Availability	0x01					
					Work	0x02					
					Drive	0x03					
					101Reserved	0x04					
					Error	0x06					
					NotAvailable	0x07					
		1	7	2	<b>VehicleMotion (Vehicle Motion)</b>		1	0	0 - 3		
					VehicleNotInMotion	0x00					
					VehicleInMotion	0x01					
					Error	0x02					
					NotAvailable	0x03					
		2	1	4	<b>Driver1TimeRelatedStates (Driver 1 Time Related States)</b>		1	0	0 - 15		
					Normal/NoLimitsReached	0x00					
					Limit1: 15MinBefore4.5H	0x01					
					Limit2: 4.5HReached	0x02					
					Limit3: 15MinBefore9H	0x03					
					Limit4: 9HReached	0x04					
					Limit5: 15MinBefore16H	0x05					
					Limit6: 16HReached	0x06					
					WeeklyDrivingTimePreWarningActive	0x07					
					WeeklyDrivingTimeWarningActive	0x08					
					2WeeksDrivingTimePreWarningActive	0x09					
					2WeeksDrivingTimeWarningActive	0x0A					
					Driver1CardExpiryWarningActive	0x0B					
					NextMandatoryDriver1CardDownloadWarningActive	0x0C					
					Other	0x0D					
					Error	0x0E					
					NotAvailable	0x0F					
		2	5	2	<b>DriverCardDriver1 (Driver Card, Driver 1)</b>		1	0	0 - 3		
					DriverCardNotPresent	0x00					
					DriverCardPresent	0x01					
					Error	0x02					
					NotAvailable	0x03					
		2	7	2	<b>Overspeed (Overspeed)</b>		1	0	0 - 3		
					NoOverspeed	0x00					



					Overspeed	0x01						
					Error	0x02						
					NotAvailable	0x03						
		3	1	4	<b>Driver2TimeRelatedStates (Driver 2 Time Related States)</b>		1	0	0 - 15			
					Normal/NoLimitsReached	0x00						
					Limit1: 15MinBefore4.5H	0x01						
					Limit2: 4.5HReached	0x02						
					Limit3: 15MinBefore9H	0x03						
					Limit4: 9HReached	0x04						
					Limit5: 15MinBefore16H	0x05						
					Limit6: 16HReached	0x06						
					1100Reserved	0x07						
					Other	0x0D						
					Error	0x0E						
					NotAvailable	0x0F						
		3	5	2	<b>DriverCardDriver2 (Driver Card, Driver 2)</b>		1	0	0 - 3			
					DriverCardNotPresent	0x00						
					DriverCardPresent	0x01						
					Error	0x02						
					NotAvailable	0x03						
		4	1	2	<b>SystemEvent (System Event)</b>		1	0	0 - 3			
					NoSystemEvent	0x00						
					SystemEvent	0x01						
					Error	0x02						
					NotAvailable	0x03						
		4	3	2	<b>HandlingInformation (Handling Information)</b>		1	0	0 - 3			
					NoHandlingInformation	0x00						
					HandlingInformation	0x01						
					Error	0x02						
					NotAvailable	0x03						
		4	5	2	<b>SystemPerformance (Tachograph Performance)</b>		1	0	0 - 3			
					NoSystemPerformance	0x00						
					SystemPerformance	0x01						
					Error	0x02						
					NotAvailable	0x03						
		4	7	2	<b>DirectionIndicator (Direction Indicator)</b>		1	0	0 - 3			
					Forward	0x00						
					Reverse	0x01						
					Error	0x02						
					NotAvailable	0x03						
X		5	1	16	<b>TachoOutputShaftSpeed (Tachograph Output Shaft Speed)</b>		0.125	0	0 - 8031.88	rpm		
X					Error	0xFE00						
X					NotAvailable	0xFF00						
X		7	1	16	<b>TCOVehSpeed (Tachograph Vehicle Speed)</b>		0.00390625	0	0 - 250.99609375	km/h	1)	
X					Error	0xFE00						
X					NotAvailable	0xFF00						

Note 1) This signal is the primary source of vehicle speed.



### 2.4.3.63 TimeDate (Time/Date) - ICL

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/proprietary
18FEE617	1000	1000	00FEE6	6	Cyclic	0	0	E6	17		Std

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	8	<b>Seconds (Seconds)</b>		0.25	0	0 - 62.5	s	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	2	1	8	<b>Minutes (Minutes)</b>		1	0	0 - 250	mins	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	3	1	8	<b>Hours (Hours)</b>		1	0	0 - 250	hr	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	4	1	8	<b>Month (Month)</b>		1	0	0 - 250	months	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	5	1	8	<b>Day (Day)</b>		0.25	0	0 - 62.5	days	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	6	1	8	<b>Year (Year)</b>		1	1985	1985 - 2235	years	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	7	1	8	<b>LocalMinuteOffset (Local Minute Offset)</b>		1	-125	-125 - 125	mins	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
	X	8	1	8	<b>LocalHourOffset (Local Hour Offset)</b>		1	-125	-125 - 125	hr	
	X				Error	0xFE					
	X				NotAvailable	0xFF					



**2.4.3.64 TireConditionProprietary (Tire Condition Proprietary) - TM**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18FF0333	500	500	00FF03	6	Cyclic	0	0	03	33		Prop



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S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	8	<b>TireLocationProp (Tire Location)</b>		1	0	0 - 255		1)
	X				Axle1OuterLeftTire	0x16					
	X				Axle1InnerLeftTire	0x17					
	X				Axle1InnerRightTire	0x19					
	X				Axle1OuterRightTire	0x1A					
	X				Axle2OuterLeftTire	0x26					
	X				Axle2InnerLeftTire	0x27					
	X				Axle2InnerRightTire	0x29					
	X				Axle2OuterRightTire	0x2A					
	X				Axle3OuterLeftTire	0x36					
	X				Axle3InnerLeftTire	0x37					
	X				Axle3InnerRightTire	0x39					
	X				Axle3OuterRightTire	0x3A					
	X				Axle4OuterLeftTire	0x46					
	X				Axle4InnerLeftTire	0x47					
	X				Axle4InnerRightTire	0x49					
	X				Axle4OuterRightTire	0x4A					
	X				Axle5OuterLeftTire	0x56					
	X				Axle5InnerLeftTire	0x57					
	X				Axle5InnerRightTire	0x59					
	X				Axle5OuterRightTire	0x5A					
	X				Error	0xFE					
					NotAvailable	0xFF					
	X	2	1	8	<b>TirePressure (Tire Pressure)</b>		8	0	0 - 2000	kPa	
	X				Error	0xFE					
	X				NotAvailable	0xFF					
		3	1	16	<b>TireTemperature (Tire Temperature)</b>		0.03125	-273	-273 - 1735	deg	
					Error	0xFE00					
					NotAvailable	0xFF00					
	X	6	1	16	<b>TireAirLeakageRate (Tire Air Leakage Rate)</b>		0.1	0	0 - 6425.5	Pa/s	
	X				Error	0xFE00					
	X				NotAvailable	0xFF00					
	X	8	1	2	<b>AirLeakageDetection (Air Leakage Detection)</b>		1	0	0 - 3		
	X				NoAirLeakageDetected	0x00					
	X				AirLeakageDetected	0x01					
					Error	0x02					
	X				NotAvailable	0x03					
	X	8	6	3	<b>TirePressThresholdDetection (Tire Pressure Threshold Detection)</b>		1	0	0 - 7		
					ExtremeOverPressure	0x00					
	X				OverPressure	0x01					
	X				NoWarningPressure	0x02					
	X				UnderPressure	0x03					
	X				ExtremeUnderPressure	0x04					
					NotDefined	0x05					
	X				ErrorIndicator	0x06					
	X				NotAvailable	0x07					

Note 1) Bit-mapped. High nibble: axle position. Low nibble: wheel position

**2.4.3.65 TransmissionFluids (Transmission Fluids) - T**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18FEF803	1000	1000	00FEF8	6	Cyclic	0	0	F8	03		Std



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S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
		1	1	8	<b>ClutchPress (Clutch Press)</b>		16	0	0 - 4000	kPa	
					Error	0xFE					
					NotAvailable	0xFF					
		2	1	8	<b>TransOilLevel (Transmission Oil Level)</b>		0.4	0	0 - 100	%	
					Error	0xFE					
					NotAvailable	0xFF					
		3	1	8	<b>TransFilterDiffPress (Transmission Filter Differential Pressure)</b>		2	0	0 - 500	kPa	
					Error	0xFE					
					NotAvailable	0xFF					
		4	1	8	<b>TransOilPress (Transmission Oil Pressure)</b>		16	0	0 - 4000	kPa	
					Error	0xFE					
					NotAvailable	0xFF					
X		5	1	16	<b>TransOilTemp (Transmission Oil Temp)</b>		0.03125	-273	-273 - 1734.97	deg	
X					Error	0xFE00					
X					NotAvailable	0xFF00					
X		7	1	8	<b>TransOilLevelHigh_Low (Transmission Oil Level High/Low)</b>		0.5	-62.5	-62.5 - 62.5	L	
X					Error	0xFE					
X					NotAvailable	0xFF					
X		8	1	4	<b>TransOilLevelCountdownTimer (Transmission Oil Level Countdown Timer)</b>		1	0	0 - 15		
X					lessThan1Minute	0x00					
X					OneMinute	0x01					
X					TwoMinutes	0x02					
X					ThreeMinutes	0x03					
X					FourMinutes	0x04					
X					FiveMinutes	0x05					
X					SixMinutes	0x06					
X					SevenMinutes	0x07					
X					EightMinutes	0x08					
X					NineMinutes	0x09					
X					TenMinutes	0x0A					
X					ElevenMinutes	0x0B					
X					TwelveMinutes	0x0C					
X					ThirteenMinutes	0x0D					
X					Error	0x0E					
X					NotAvailable	0x0F					
X		8	5	4	<b>TransOilLevelMeasurementStatus (Transmission Oil Level Measurement Status)</b>		1	0	0 - 15		
X					CndtnsVldFrTrnsOILvlMeasurement	0x00					
X					CndtnsNtVldSttlngTmrStlCntngDw	0x01					
X					ConditionsNotValidTransInGear	0x02					
X					CndtnsNtVldTransFluidTempTooLow	0x03					
X					CndtnsNtVldTrnsFluidTempTooHigh	0x04					
X					CndtnsNtVldVhclMvngOtpTShftSpdT	0x05					
X					CndtnsNotValidVehicleNotLevel	0x06					



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	X			CnditionsNotValidEngSpeedTooLow	0x07					
	X			CnditionsNotValidEngSpeedTooHigh	0x08					
	X			NotDefined	0x0C					
	X			ConditionsNotValidOther	0x0D					
	X			Error	0x0E					
	X			NotAvailable	0x0F					

**2.4.3.66 TransmissionProprietary2 (Transmission Proprietary 2) - AWD**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18FFA104	100	100	00FFA1	6	Cyclic	0	0	A1	04		Prop

Message is not sent by automatic gearboxes, only from Scania gearboxes.



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S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
		1	1	2	<b>LowSplit (Low Split)</b>		1	0	0 - 3		
					NotInLowSplit	0x00					
					InLowSplit	0x01					
					Error	0x02					
					NotAvailable	0x03					
		1	3	2	<b>Reverse (Reverse)</b>		1	0	0 - 3		
					NotInReverse	0x00					
					InReverse	0x01					
					Error	0x02					
					NotAvailable	0x03					
	X	1	5	2	<b>Neutral (Neutral)</b>		1	0	0 - 3		1)
	X				NotInNeutral	0x00					
	X				InNeutral	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
		1	7	2	<b>EcoRollActive (Eco Roll Active)</b>		1	0	0 - 3		2)
					Disabled	0x00					
					Enabled	0x01					
					Error	0x02					
					NotAvailable	0x03					
		2	1	8	<b>GMSTextNo (GMS Text No.)</b>		1	0	0 - 250	text	
					ClutchDown1	0x00					
					ClutchUp	0x02					
					StartAuto	0x05					
					Start1	0x06					
					Start2	0x07					
					Start3	0x08					
					Start4	0x09					
					Start5	0x0A					
					Start6	0x0B					
					SplitHighPTOEG	0x0C					
					SplitLowPTOEG	0x0D					
					PTO-EG	0x0E					
					OffRoad	0x0F					
					OpticruiseDegradation(LimitedPerformance)	0xA0					
					OpticruiseDegradation(LimitedGearSelection)	0xA1					
					OpticruiseDegradation(LockedGear)	0xA2					
					OpticruiseDegradation(UseClutch)	0xA3					
					ComfortShiftDegradation(RestrictedMode)	0xA4					
					ComfortShiftDegradation(LeverMalfunction)	0xA5					
					NeutralNotSelected	0xA6					
					ZeroTorqueCalibration	0xDF					
					ZeroTorqueCalibrationPTO	0xE0					
					ConfigurationError	0xE1					
					OPCmessage0	0xE2					
					OPCmessage1	0xE3					
					OPCmessage2	0xE4					





					OPCmessage3	0xE5					
					OPCmessage4	0xE6					
					OPCmessage5	0xE7					
					OPCmessage6	0xE8					
					OPCmessage7	0xE9					
					OPCmessage8	0xEA					
					OPCmessage9	0xEB					
					OPCmessage10	0xEC					
					RDmessage0	0xED					
					RDmessage1	0xEE					
					RDmessage2	0xEF					
					RDmessage3	0xF0					
					RDmessage4	0xF1					
					RDmessage5	0xF2					
					RDmessage6	0xF3					
					RDmessage7	0xF4					
					RDmessage8	0xF5					
					RDmessage9	0xF6					
					RDmessage10	0xF7					
					ClutchMode	0xF8					
					LimpHomeMode	0xF9					
					LockedGear	0xFA					
					Error	0xFE					
					NotAvailable	0xFF					
		3	1	2	<b>GearboxTemperatureStatus (Gearbox Temperature Status)</b>		1	0	0 - 3		3)
					Normal	0x00					
					Temperature Warning	0x01					
					Error	0x02					
					NotAvailable	0x03					
		3	3	2	<b>CCOff (CC-Off)</b>		1	0	0 - 3		
					CCOffNotActivated	0x00					
					CCOffActivated	0x01					
					Error	0x02					
					NotAvailable	0x03					
	X	3	5	2	<b>LowRange (Low Range)</b>		1	0	0 - 3		
	X				NotInLowRange	0x00					
	X				InLowRange	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
		3	7	2	<b>HighRange (High Range)</b>		1	0	0 - 3		
					NotInHighRange	0x00					
					InHighRange	0x01					
					Error	0x02					
					NotAvailable	0x03					
		4	1	4	<b>ClutchActivationState (Clutch Activation State)</b>		1	0	0 - 15		
					Closed	0x00					
					Clutch moving	0x01					
					Open	0x02					
					Disengaged	0x03					
					Reserved	0x04					
					Reserved	0x05					
					Reserved	0x06					
					Reserved	0x07					
					Reserved	0x08					



					Reserved	0x09					
					Reserved	0x0A					
					Reserved	0x0B					
					Reserved	0x0C					
					Reserved	0x0D					
					Error	0x0E					
					NotAvailable	0x0F					
		4	5	2	<b>EngineDisengagedDriving ()</b>		1	0	0 - 3		4)
					EngineNotDisengagedFromPowertrain	0x00					
					EngineDisengagedFromPowertrain	0x01					
					Error	0x02					
					NotAvailable	0x03					
		4	7	2	<b>ActivateAutomaticHillHoldRequest (Activate Automatic Hill Hold Request)</b>		1.0	0.0	0 - 3	-	
					DoNotActivateAutomaticHillHoldRequest	0x00					
					ActivateAutomaticHillHoldRequest	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		5	1	8	<b>Drivemode (Drive Mode)</b>		1	0	0 - 250		
					R (Reverse)	0x00					
					RL (Reverse-Limphone)	0x01					
					RC (Reverse-Clutch mode)	0x02					
					RH (Reverse-Hill)	0x03					
					RO (ReverseOffRoad)	0x04					
					RP (Reverse-Power)	0x05					
					RE (Reverse-Economy)	0x07					
					N (Neutral)	0x08					
					NL (Neutral -Limphone)	0x09					
					NC (Neutral -Clutch mode)	0x0A					
					NH (Neutral-Hill)	0x0B					
					NO (NeutralOffRoad)	0x0C					
					NP (Neutral-Power)	0x0D					
					NE (Neutral-Economy)	0x0F					
					A (Automat)	0x10					
					AL Automat-Limphone)	0x11					
					AC Automat-Clutch mode)	0x12					
					AH (Automat-Hill)	0x13					
					AO (AutomatOffRoad)	0x14					
					AP (Automat-Power)	0x15					
					AE (Automatic-Economy)	0x17					
					M (Manual )	0x18					
					ML Manual -Limphone)	0x19					
					MC Manual -Clutch mode)	0x1A					
					MH (Manual -Hill)	0x1B					
					MO (ManualOffRoad)	0x1C					
					MP (Manual-Power)	0x1D					
					ME (Manual-Economy)	0x1F					
					L1 (CS - Limp Home Mode 1)	0x7D					
					L2 (CS - Limp Home Mode 2)	0x7E					
					L3 (CS - Limp Home Mode 3)	0x7F					
					Error	0xFE					
					NotAvailable	0xFF					
		6	1	4	<b>SoundRequest (Sound Request)</b>		1	0	0 - 13		
					Sound Off	0x00					
					Sound 1	0x02					
					Sound 2	0x03					

					Sound 3	0x04					
					Sound 4	0x05					
					Reserved	0x0E					
					TakeNoAction	0x0F					
		6	5	2	<b>ClutchFullyClosed (Clutch Fully Closed)</b>		1	0	0 - 3		
					ClutchNotFullyClosed	0x00					
					ClutchFullyClosed	0x01					
					Error	0x02					
					NotAvailable	0x03					
		6	7	2	<b>EngEmgcyStopDemand (Engine Emergency Stop Demand)</b>		1	0	0 - 3		
					EngineEmergencyStopNotDemanded	0x00					
					EngineEmergencyStopDemanded	0x01					
					Error	0x02					
					NotAvailable	0x03					
		7	1	12	<b>EstimatedRoadSlope (EstimatedRoadSlope)</b>		0.02	-40	-40 - 40.3	%	
					Error	0x0FE0					
					NotAvailable	0x0FFF					
		8	5	4	<b>RoadSlopeAdaptStatus (RoadSlopeAdaptStatus)</b>		1	0	0 - 15		
					No adaption	0x00					
					Adaption based on driving resistance	0x01					
					Adaption Unvalidated	0x02					
					Adaption based on map data	0x03					
					Error	0x0E					
					Not available	0x0F					

Note 1) Not sent by current version of the manual gearbox, introduced with the scania GZ-gearbox

Note 2) In hybrid vehicles, the signal is set active when the clutch is disengaged and the vehicle is propelled by the electrical machine.

Note 3) Only sent if a sensor is connected to the ECU, not standard in NGS.

Note 4) Used to signal that the combustion engine does not contribute to propelling the vehicle in eg. electric drive situations.



### 2.4.3.67 TransmissionProprietary2 (Transmission Proprietary 2) - T

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/ proprietary
18FFA103	100	100	00FFA1	6	Cyclic	0	0	A1	03		Prop

Message is not sent by automatic gearboxes, only from Scania gearboxes.



## External CAN Communication Specification

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	2	<b>LowSplit (Low Split)</b>		1	0	0 - 3		
	X				NotInLowSplit	0x00					
	X				InLowSplit	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
		1	3	2	<b>Reverse (Reverse)</b>		1	0	0 - 3		
					NotInReverse	0x00					
					InReverse	0x01					
					Error	0x02					
					NotAvailable	0x03					
	X	1	5	2	<b>Neutral (Neutral)</b>		1	0	0 - 3		1)
	X				NotInNeutral	0x00					
	X				InNeutral	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
		1	7	2	<b>EcoRollActive (Eco Roll Active)</b>		1	0	0 - 3		2)
					Disabled	0x00					
					Enabled	0x01					
					Error	0x02					
					NotAvailable	0x03					
		2	1	8	<b>GMSTextNo (GMS Text No.)</b>		1	0	0 - 250	text	
					ClutchDown1	0x00					
					ClutchUp	0x02					
					StartAuto	0x05					
					Start1	0x06					
					Start2	0x07					
					Start3	0x08					
					Start4	0x09					
					Start5	0x0A					
					Start6	0x0B					
					SplitHighPTOEG	0x0C					
					SplitLowPTOEG	0x0D					
					PTO-EG	0x0E					
					OffRoad	0x0F					
					OpticruiseDegradation(LimitedPerformance)	0xA0					
					OpticruiseDegradation(LimitedGearSelection)	0xA1					
					OpticruiseDegradation(LockedGear)	0xA2					
					OpticruiseDegradation(UseClutch)	0xA3					
					ComfortShiftDegradation(RestrictedMode)	0xA4					
					ComfortShiftDegradation(LeverMalfunction)	0xA5					
					NeutralNotSelected	0xA6					
					ZeroTorqueCalibration	0xDF					
					ZeroTorqueCalibrationPTO	0xE0					
					ConfigurationError	0xE1					
					OPCmessage0	0xE2					
					OPCmessage1	0xE3					
					OPCmessage2	0xE4					



## External CAN Communication Specification

					OPCmessage3	0xE5					
					OPCmessage4	0xE6					
					OPCmessage5	0xE7					
					OPCmessage6	0xE8					
					OPCmessage7	0xE9					
					OPCmessage8	0xEA					
					OPCmessage9	0xEB					
					OPCmessage10	0xEC					
					RDmessage0	0xED					
					RDmessage1	0xEE					
					RDmessage2	0xEF					
					RDmessage3	0xF0					
					RDmessage4	0xF1					
					RDmessage5	0xF2					
					RDmessage6	0xF3					
					RDmessage7	0xF4					
					RDmessage8	0xF5					
					RDmessage9	0xF6					
					RDmessage10	0xF7					
					ClutchMode	0xF8					
					LimpHomeMode	0xF9					
					LockedGear	0xFA					
					Error	0xFE					
					NotAvailable	0xFF					
		3	1	2	<b>GearboxTemperatureStatus (Gearbox Temperature Status)</b>		1	0	0 - 3		3)
					Normal	0x00					
					Temperature Warning	0x01					
					Error	0x02					
					NotAvailable	0x03					
		3	3	2	<b>CCOff (CC-Off)</b>		1	0	0 - 3		
					CCOffNotActivated	0x00					
					CCOffActivated	0x01					
					Error	0x02					
					NotAvailable	0x03					
	X	3	5	2	<b>LowRange (Low Range)</b>		1	0	0 - 3		
	X				NotInLowRange	0x00					
	X				InLowRange	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
	X	3	7	2	<b>HighRange (High Range)</b>		1	0	0 - 3		
	X				NotInHighRange	0x00					
	X				InHighRange	0x01					
	X				Error	0x02					
	X				NotAvailable	0x03					
		4	1	4	<b>ClutchActivationState (Clutch Activation State)</b>		1	0	0 - 15		
					Closed	0x00					
					Clutch moving	0x01					
					Open	0x02					
					Disengaged	0x03					
					Reserved	0x04					
					Reserved	0x05					
					Reserved	0x06					
					Reserved	0x07					
					Reserved	0x08					



					Reserved	0x09					
					Reserved	0x0A					
					Reserved	0x0B					
					Reserved	0x0C					
					Reserved	0x0D					
					Error	0x0E					
					NotAvailable	0x0F					
		4	5	2	<b>EngineDisengagedDriving ()</b>		1	0	0 - 3		4)
					EngineNotDisengagedFromPowertrain	0x00					
					EngineDisengagedFromPowertrain	0x01					
					Error	0x02					
					NotAvailable	0x03					
		4	7	2	<b>ActivateAutomaticHillHoldRequest (Activate Automatic Hill Hold Request)</b>		1.0	0.0	0 - 3	-	
					DoNotActivateAutomaticHillHoldRequest	0x00					
					ActivateAutomaticHillHoldRequest	0x01					
					Reserved	0x02					
					TakeNoAction	0x03					
		5	1	8	<b>Drivemode (Drive Mode)</b>		1	0	0 - 250		
					R (Reverse)	0x00					
					RL (Reverse-Limphone)	0x01					
					RC (Reverse-Clutch mode)	0x02					
					RH (Reverse-Hill)	0x03					
					RO (ReverseOffRoad)	0x04					
					RP (Reverse-Power)	0x05					
					RE (Reverse-Economy)	0x07					
					N (Neutral)	0x08					
					NL (Neutral -Limphone)	0x09					
					NC (Neutral -Clutch mode)	0x0A					
					NH (Neutral-Hill)	0x0B					
					NO (NeutralOffRoad)	0x0C					
					NP (Neutral-Power)	0x0D					
					NE (Neutral-Economy)	0x0F					
					A (Automat)	0x10					
					AL Automat-Limphone)	0x11					
					AC Automat-Clutch mode)	0x12					
					AH (Automat-Hill)	0x13					
					AO (AutomatOffRoad)	0x14					
					AP (Automat-Power)	0x15					
					AE (Automatic-Economy)	0x17					
					M (Manual )	0x18					
					ML Manual -Limphone)	0x19					
					MC Manual -Clutch mode)	0x1A					
					MH (Manual -Hill)	0x1B					
					MO (ManualOffRoad)	0x1C					
					MP (Manual-Power)	0x1D					
					ME (Manual-Economy)	0x1F					
					L1 (CS - Limp Home Mode 1)	0x7D					
					L2 (CS - Limp Home Mode 2)	0x7E					
					L3 (CS - Limp Home Mode 3)	0x7F					
					Error	0xFE					
					NotAvailable	0xFF					
		6	1	4	<b>SoundRequest (Sound Request)</b>		1	0	0 - 13		
					Sound Off	0x00					
					Sound 1	0x02					
					Sound 2	0x03					

					Sound 3	0x04					
					Sound 4	0x05					
					Reserved	0x0E					
					TakeNoAction	0x0F					
		6	5	2	<b>ClutchFullyClosed (Clutch Fully Closed)</b>		1	0	0 - 3		
					ClutchNotFullyClosed	0x00					
					ClutchFullyClosed	0x01					
					Error	0x02					
					NotAvailable	0x03					
		6	7	2	<b>EngEmgcyStopDemand (Engine Emergency Stop Demand)</b>		1	0	0 - 3		
					EngineEmergencyStopNotDemanded	0x00					
					EngineEmergencyStopDemanded	0x01					
					Error	0x02					
					NotAvailable	0x03					
		7	1	12	<b>EstimatedRoadSlope (EstimatedRoadSlope)</b>		0.02	-40	-40 - 40.3	%	
					Error	0x0FE0					
					NotAvailable	0x0FFF					
		8	5	4	<b>RoadSlopeAdaptStatus (RoadSlopeAdaptStatus)</b>		1	0	0 - 15		
					No adaption	0x00					
					Adaption based on driving resistance	0x01					
					Adaption Unvalidated	0x02					
					Adaption based on map data	0x03					
					Error	0x0E					
					Not available	0x0F					

Note 1) Not sent by current version of the manual gearbox, introduced with the scania GZ-gearbox

Note 2) In hybrid vehicles, the signal is set active when the clutch is disengaged and the vehicle is propelled by the electrical machine.

Note 3) Only sent if a sensor is connected to the ECU, not standard in NGS.

Note 4) Used to signal that the combustion engine does not contribute to propelling the vehicle in eg. electric drive situations.





### 2.4.3.68 VehicleWeight (Vehicle Weight) - F

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/proprietary
18FEEA2F	100	100	00FEEA	6	Cyclic	0	0	EA	2F		Std

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
	X	1	1	8	<b>AxleLocation (Axle Location)</b>		1	0	0 - 255		1)
	X				NotAvailable	0xFF					
	X	2	1	16	<b>AxleWeight (Axle Weight)</b>		0.5	0	0 - 32127.5	kg	
	X				Error	0xFE00					
	X				NotAvailable	0xFF00					
		4	1	16	<b>TrailerWeight (Trailer Weight)</b>		2	0	0 - 128510	kg	
					Error	0xFE00					
					NotAvailable	0xFF00					
		6	1	16	<b>CargoWeight (Cargo Weight)</b>		2	0	0 - 128510	kg	
					Error	0xFE00					
					NotAvailable	0xFF00					

Note 1) The low order 4 bits represent a position number, counting left to right when facing in the direction of normal vehicle travel (forward). The high order 4 bits represent a position number, counting front to back on the vehicle.

**2.4.3.69 VehicleWeight (Vehicle Weight) - ICL**

Identifier	Tmin	Tmax	PGN	Default Priority	Message Type	DPext	DP	Group Extension	Source	Destination	Standard/proprietary
18FEEA17	100	100	00FEEA	6	Cyclic	0	0	EA	17		Std

S e n d e r	R e c e i v e r	B y t e	B i t	L e n g t h	Explanation	S t a t e	Resolution	Offset	Operating range Data range	Unit	N o t e
		1	1	8	<b>AxleLocation (Axle Location)</b>		1	0	0 - 255		1)
					NotAvailable	0xFF					
		2	1	16	<b>AxleWeight (Axle Weight)</b>		0.5	0	0 - 32127.5	kg	
					Error	0xFE00					
					NotAvailable	0xFF00					
	X	4	1	16	<b>TrailerWeight (Trailer Weight)</b>		2	0	0 - 128510	kg	
	X				Error	0xFE00					
	X				NotAvailable	0xFF00					
		6	1	16	<b>CargoWeight (Cargo Weight)</b>		2	0	0 - 128510	kg	
					Error	0xFE00					
					NotAvailable	0xFF00					

Note 1) The low order 4 bits represent a position number, counting left to right when facing in the direction of normal vehicle travel (forward). The high order 4 bits represent a position number, counting front to back on the vehicle.

## 2.5 Changes

Update	ECO Number	CR	Change description	Date	Sign.
XXX	0		Added Message ASC2 K -> FF, with ID 0CD2FF27 with reception on segment ExtBodywork_PDU1, Destination Address; 0xFF / Global / FF	2017-08-11	
XXX	0		Added Message EBC2 K, with ID 18FEBF27 with reception on segment ExtBodywork_PDU2	2017-08-11	
XXX	0		Added Message Illumination ICL -> FF, with ID 18D0FF17 with reception on segment ExtBodywork_PDU1, Destination Address; 0xFF / Global / FF	2017-08-11	
XXX	0		Added Message TC1 SC -> FF, with ID 0C01FF05 with reception on segment ExtBodywork_PDU1, Destination Address; 0xFF / Global / FF	2017-08-11	
XXX	0		Added Message TP_CM E -> FF, with ID 18ECFF00 with reception on segment ExtBodywork_PDU1, Destination Address; 0xFF / Global / FF	2017-08-11	
XXX	0		Added Message TP_DT E -> FF, with ID 18EBFF00 with reception on segment ExtBodywork_PDU1, Destination Address; 0xFF / Global / FF	2017-08-11	
XXX	0		Removed Message Illumination ICL -> FF, with ID 18D0FF17 with reception on segment ExtBodywork_PDU1, Destination Address; 0xFF / Global / FF	2017-08-11	
XXX	0		Removed Message TC1 SC -> FF, with ID 0C01FF05 with reception on segment ExtBodywork_PDU1, Destination Address; 0xFF / Global / FF	2017-08-11	
XXX	0		Removed Message TP_CM E -> FF, with ID 18ECFF00 with reception on segment ExtBodywork_PDU1, Destination Address; 0xFF / Global / FF	2017-08-11	
XXX	0		Removed Message TP_DT E -> FF, with ID 18EBFF00 with reception on segment ExtBodywork_PDU1, Destination Address; 0xFF / Global / FF	2017-08-11	
XXX	0		Added Signal AmbientLightState in Message CabInformationProprietary1 18FF9617	2017-08-11	
XXX	0		Added Signal ParkBrakeReleaseInhibitRequest in Message CruiseControlVehSpeed 18FEF100	2017-08-11	
XXX	0		Added Signal HazardWarningSignalStatus in Message CUVInformation 18FFB11E	2017-08-11	
XXX	0		Changed Tmin from '100' to '10' in message Electronic Brake Controller 5 18FDC40B	2017-08-11	
XXX	0		Changed PgRepetitionType from 'Cyclic' to 'On Change' in message Electronic Brake Controller 5 18FDC40B	2017-08-11	
XXX	0		Added Signal AttentionSupportState in Message ICLInformationProprietary 18FFD517	2017-08-11	
XXX	0		Added Signal CCAPMinSpeedSetting in Message ICLInformationProprietary 18FFD517	2017-08-11	
XXX	0		Added Signal BOLActive in Message ICLInformationProprietary 18FFD517	2017-08-11	
XXX	0		Added SignalValue Slovak 0x1F in SignalLanguageNo in Message ICLInformationProprietary 18FFD517	2017-08-11	
XXX	0		Added SignalValue Bulgarian 0x20 in SignalLanguageNo in Message ICLInformationProprietary 18FFD517	2017-08-11	
XXX	0		Added SignalValue Estonian 0x21 in SignalLanguageNo in Message ICLInformationProprietary 18FFD517	2017-08-11	
XXX	0		Added SignalValue Latvian 0x22 in SignalLanguageNo in Message ICLInformationProprietary 18FFD517	2017-08-11	
XXX	0		Added SignalValue Lithuanian 0x23 in SignalLanguageNo in Message ICLInformationProprietary 18FFD517	2017-08-11	
XXX	0		Added Signal ActualVehicleLevel in Message ScaniaVehicleStatusMessage3 18FF26E6	2017-08-11	

Update	ECO Number	CR	Change description	Date	Sign.
XXX	0		Added Signal MemLevelRequest in Message BodyworkAirSuspensionControl 0CFF2EFE	2017-08-11	
XXX	0		Added Signal ExhaustBellowsRequest in Message BodyworkAirSuspensionControl 0CFF2EFE	2017-08-11	
XXX	0		Added Signal AlternativeLevelRequest in Message BodyworkAirSuspensionControl 0CFF2EFE	2017-08-11	
XXX	0		Added Signal StopLevelChangeRequest in Message BodyworkAirSuspensionControl 0CFF2EFE	2017-08-11	
XXX	0		Added Signal ActivateKneelingWithBodybuilderSwitch in Message BodyworkAirSuspensionControl 0CFF2EFE	2017-08-11	
XXX	0		Added Signal VisuallyImpairedSignalVisual in Message BodyworkDriverInformation1 18FF2DFE	2017-08-11	
XXX	0		Added Signal DriversBerthAlarm in Message BodyworkDriverInformation1 18FF2DFE	2017-08-11	
XXX	0		Added Signal DisplayRequest in Message BodyworkDriverInformation1 18FF2DFE	2017-08-11	
XXX	0		Added Signal ParkingBrakeRequest in Message BodyworkVehicleControl 0CFF2AFE	2017-08-11	
XXX	0		Added Signal AutoEngineStopAllowed in Message PowerManagementControl 18FF15FE	2017-08-11	
XXX	0		Added SignalValue EngineDurability 0x16 in SignalEnginePauseInhibitReason in Message PowerManagementControl 18FF15FE	2017-08-11	
XXX	0		Added SignalValue VehicleSpeedTooHigh 0x17 in SignalEnginePauseInhibitReason in Message PowerManagementControl 18FF15FE	2017-08-11	
XXX	0		Added SignalValue EngineDurability 0x16 in SignalEvModeEnginePauseInhibitReason in Message PowerManagementControl 18FF15FE	2017-08-11	
XXX	0		Added SignalValue VehicleSpeedTooHigh 0x17 in SignalEvModeEnginePauseInhibitReason in Message PowerManagementControl 18FF15FE	2017-08-11	
XXX	0		Added Message: ASC2 K -> FF, with ID: 0CD2FF27 with reception on segment ExtBodywork_PDU1, Destination Address; 0xFF / Global / FF	2018-07-05	
XXX	0		Added Message: Illumination ICL -> FF, with ID: 18D0FF17 with reception on segment ExtBodywork_PDU1, Destination Address; 0xFF / Global / FF	2018-07-05	
XXX	0		Added Message: TC1 SC -> FF, with ID: 0C01FF05 with reception on segment ExtBodywork_PDU1, Destination Address; 0xFF / Global / FF	2018-07-05	
XXX	0		Added Message: TP_CM E -> FF, with ID: 18ECFF00 with reception on segment ExtBodywork_PDU1, Destination Address; 0xFF / Global / FF	2018-07-05	
XXX	0		Added Message: TP_DT E -> FF, with ID: 18EBFF00 with reception on segment ExtBodywork_PDU1, Destination Address; 0xFF / Global / FF	2018-07-05	
XXX	0		Removed Message: ASC2 K -> FF, with ID: 0CD2FF27 with reception on segment ExtBodywork_PDU1, Destination Address; 0xFF / Global / FF	2018-07-05	
XXX	0		Removed Message: Illumination ICL -> FF, with ID: 18D0FF17 with reception on segment ExtBodywork_PDU1, Destination Address; 0xFF / Global / FF	2018-07-05	
XXX	0		Removed Message: TC1 SC -> FF, with ID: 0C01FF05 with reception on segment ExtBodywork_PDU1, Destination Address; 0xFF / Global / FF	2018-07-05	
XXX	0		Removed Message: TP_CM E -> FF, with ID: 18ECFF00 with reception on segment ExtBodywork_PDU1, Destination Address; 0xFF / Global / FF	2018-07-05	

Update	ECO Number	CR	Change description	Date	Sign.
XXX	0		Removed Message: TP_DT E -> FF, with ID: 18EBFF00 with reception on segment ExtBodywork_PDU1, Destination Address; 0xFF / Global / FF	2018-07-05	
XXX	0		Added SignalValues in: RetarderSelectionNonEng on Message: ERC1 18F00010	2018-07-05	
XXX	0		Added Signal:LDWActiveSteeringState in Message: ICLInformationProprietary 18FFD517	2018-07-05	
XXX	0		Added Signal:SideAssistState in Message: ICLInformationProprietary 18FFD517	2018-07-05	
XXX	0		Added Signal:EmergencyOpenerVisual in Message: BodyworkDriverInformation1 18FF2DFE	2018-07-05	
XXX	0		Added Signal:EmergencyOpenerSound in Message: BodyworkDriverInformation1 18FF2DFE	2018-07-05	