

Template:AVL ID List - CAN communication I/O elements



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CAN communication I/O elements

CAN BOSCH I/O elements

Property ID in AVL packet	Property Name	Bytes	Type	Value range		Multiplier	Units	Description	HW Support	Parameter Group
Min	Max									
801	Park Brake	1	Unsigned	0	3	-	-	Park Brake IO element is used to indicate if parking brake is active, according to CAN signal. 0 - Disengaged 1 - Engaged 2 - Error 3 - Unused	TFT100	CAN BOSCH
802	Selected	1	Unsigned	0	3	-	-	Charger state IO element is indicating current charger state, according to signal on CAN line. 0 - Disconnected 1 - Connected 2 - Error 3 - Unused	TFT100	CAN BOSCH
803	Selected Charge Mode	1	Unsigned	0	1	-	-	Selected Charge mode IO element is indicating which charge mode is currently in use, according to signal on CAN line. 0 - Default 1 - Fast	TFT100	CAN BOSCH
804	Charger Voltage	2	Unsigned	0	200000	-	mV	Charger Voltage Setpoint	TFT100	CAN BOSCH
805	Charger Current	2	Unsigned	0	200000	-	mA	Charger Current Setpoint	TFT100	CAN BOSCH
806	Charger Control Mode	1	Unsigned	0	1	-	-	Charger Control Mode IO element indicates which cahrger control mode is currently in use. 0-Remote Control C-V-Limiting 1-Open Circuit	TFT100	CAN BOSCH
807	Charger BMS COM Timeout	1	Unsigned	0	1	-	-	BMS COM Timeout IO element indicates if BMS COM Timeout has been expired. 0-Expired 1-Not expired	TFT100	CAN BOSCH
808	Charger CRC Violation	1	Unsigned	0	1	-	-	Charger CRC Violation IO element indicates if charger CRC violation has happened. 0-No CRC Violation happened 1-CRC Violation happened	TFT100	CAN BOSCH
809	Charger MC Violation	1	Unsigned	0	1	-	-	Charger MC Violation IO element indicates if charger MC violation has happened. 0-No MC Violation happened 1-MC Violation happened	TFT100	CAN BOSCH
810	Charger Status	1	Unsigned	0	7	-	-	Charger Status IO element indicates current charger status, according to CAN signal. 0-No Errorbr 1-Minimal Current Limiting 2-Reverse Polarity 3-Reserved 4-Cable Voltage Drop 5-Fan Error 6-AC Undervoltage Disconnect 7-Not Ready For Charging	TFT100	CAN BOSCH
811	Charger Voltage Actual	2	Unsigned	0	200000	-	mV	Actual Voltage IO element indicates measured actual charging voltage in mV, according to CAN signal.	TFT100	CAN BOSCH
812	Charger Internal Fault	1	Unsigned	0	1	-	mV	Charger Internal Fault IO element indicates if charger internal fault happened, according to CAN signal. 0-Internal Fault happened 1-No InternalFault happened	TFT100	CAN BOSCH
813	Charger Energy	2	Unsigned	0	65535	-	Wh	Charger Energy IO element indicates currently measured charger energy.	TFT100	CAN BOSCH
814	Charger Current Actual	2	Unsigned	0	65535	-	mA	Charger Current IO element indicates currently measured charger current.	TFT100	CAN BOSCH
815	Throttle Position	1	Unsigned	0	100	-	%	Throttle Position IO element indicates currently measured throttle position.	TFT100	CAN BOSCH
816	Brake Pressed	1	Unsigned	0	1	-	-	Brake Pressed IO element indicates if brake is pressed or not. 0-Brake Pressed 1-Brake Not Pressed	TFT100	CAN BOSCH
817	Charge Plug	1	Unsigned	0	1	-	-	Charge Plugged IO element indicates if charger is plugged in or not. 0-Charger Plugged 1-Charger Not Plugged	TFT100	CAN BOSCH

818	Kill Switch Active	1	Unsigned	0	1	-	-	Kill Switch Active IO element indicates if kill switch is active or not. 0-Kill Switch Active 1-Kill Switch Not Active	TFT100	CAN BOSCH
819	Kickstand Release	1	Unsigned	0	1	-	-	Kickstand Release Status IO element indicates if kickstand released or not. 0-Kickstand Released 1-Kickstand Not Released	TFT100	CAN BOSCH
820	Powertrain State	1	Unsigned	0	6	-	-	Powertrain State IO element indicates current powertrain state. 0-Off 1-Booting 2-Ready 3-Drive 4-Charge 5-Shutdown 6-Error	TFT100	CAN BOSCH
821	Malfunction Indicator	1	Unsigned	0	1	-	-	Malfunction Indication IO element indicates if malfunction indicator is active. 0-Malfunction Indicator Not Active 1-Malfunction Indicator Active	TFT100	CAN BOSCH
822	Current range	2	Unsigned	0	65535	-	-	Current Range IO element indicates currently measured current range	TFT100	CAN BOSCH
823	SoH Battery	1	Unsigned	0	100	-	%	SoH Battery IO element indicates currently measured battery SoH.	TFT100	CAN BOSCH
824	SoC Battery	1	Unsigned	0	100	-	%	SoC Battery IO element indicates currently measured battery SoC.	TFT100	CAN BOSCH
825	Vehicle available	1	Unsigned	0	1	-	-	Vehicle Available IO element indicates if vehicle is currently available or not. 0-Vehicle Not Available 1-Vehicle Available	TFT100	CAN BOSCH
826	Charging Active	1	Unsigned	0	1	-	-	Charging Active IO element indicates if charging is currently active or not. 0-Charging Not Active 1-Charging Active	TFT100	CAN BOSCH
827	Remaining Charge Time	2	Unsigned	0	65535	-	min	Remaining Charging Time IO element indicates remaining charging time until vehicle is fully charged.	TFT100	CAN BOSCH
828	Remaining Capacity	2	Unsigned	0	65535	-	Ah	Remaining Capacity IO element indicates remaining battery capacity.	TFT100	CAN BOSCH
829	Full Charge Capacity	2	Unsigned	0	65535	-	Ah	Full Charge Capacity IO element indicates full charge battery capacity.	TFT100	CAN BOSCH
830	Driving direction	1	Unsigned	0	3	-	-	Driving Direction IO element indicates current vehicle driving direction. 0-Park 1-Reverse 2-Forward 3-Neutral	TFT100	CAN BOSCH
831	Drive Mode	1	Unsigned	0	3	-	-	Drive Mode IO element indicates current vehicle drive mode. 0-Go 1-Cruise 2-Boost 3-Reserved1	TFT100	CAN BOSCH
832	Park Brake Active	1	Unsigned	0	1	-	-	Park Brake Active IO element indicates if park brake is currently active or not. 0-Park Brake Not Active 1-Park Brake Active	TFT100	CAN BOSCH
833	Total Distance	4	Unsigned	0	1048575	-	km	Total Distance IO element indicates measured vehicle total traveled distance.	TFT100	CAN BOSCH
834	Trip Distance	4	Unsigned	0	4095000	-	m	Trip Distance IO element indicates measured vehicle traveled distance during current trip.	TFT100	CAN BOSCH
835	Vehicle speed	1	Unsigned	0	255	-	km/h	Vehicle Speed IO element indicates currently measured vehicle speed in km/h.	TFT100	CAN BOSCH
836	Ignition Status	1	Unsigned	0	7	-	-	Ignition Status IO element current vehicle ignition status. 0-IGN_LOCK 1-IGN_OFF 2-IGN_ACC 3-Free 4-IGN_ON 5-IGN_START 6-LeM_NM:IGN_OFF 7-LeM_NM:IGN_ON	TFT100	CAN BOSCH
837	Ignition Fast Status	1	Unsigned	0	1	-	-	Ignition Fast Status IO element indicates if ignition is active or not. 0-Ignition Not Active 1-Ignition Active	TFT100	CAN BOSCH
838	Power Consumption	2	Unsigned	0	65535	-	Wh/km	Power Consumption IO element indicates currently measured vehicle power consumption in	TFT100	CAN BOSCH
1121	CAN Unlocked	2	Unsigned	0	1	-	-	Defines if vehicle is unlocked	TFT100	CAN BOSCH
1122	BMS2 Temperature Current Max	2	Signed	-40	86	-	°C		TFT100	CAN BOSCH
1123	BMS2 Temperature Current Min	2	Signed	-40	86	-	°C		TFT100	CAN BOSCH
1124	BMS2 Voltage Cell Min	4	Unsigned	0	7000	-	mV		TFT100	CAN BOSCH
1125	BMS2 Voltage Cell Max	4	Unsigned	0	7000	-	mV		TFT100	CAN BOSCH
1100	BMS0 Temperature Current Max	2	Signed	-40	86	-	°C		TFT100	CAN BOSCH
1101	BMS0 Temperature Current Min	2	Signed	-40	86	-	°C		TFT100	CAN BOSCH
11002	BMS0 Voltage Cell Min	4	Unsigned	0	7000	-	mV		TFT100	CAN BOSCH
11003	BMS0 Voltage Cell Max	4	Unsigned	0	7000	-	mV		TFT100	CAN BOSCH
1104	BMS1 Temperature Current Max	2	Signed	-40	86	-	°C		TFT100	CAN BOSCH
1105	BMS1 Temperature Current Min	2	Signed	-40	86	-	°C		TFT100	CAN BOSCH
1106	BMS1 Voltage Cell Min	4	Unsigned	0	7000	-	mV		TFT100	CAN BOSCH
1107	BMS1 Voltage Cell Max	4	Unsigned	0	7000	-	mV		TFT100	CAN BOSCH

CAN Askoll I/O elements

Property ID in AVL packet	Property Name	Bytes	Type	Value range		Multiplier	Units	Description	HW Support	Parameter Group
Min	Max									
804	Charger Voltage	2	Unsigned	0	0xFF FF	-	mV		TFT100	CAN ASKOLL
805	Charger Current	2	Unsigned	0	0xFF FF	-	mA		TFT100	CAN ASKOLL
821	Malfunction Indication	1	Unsigned	0	1	-	-	0 - Malfunction Indicator Not Active; 1 - Active	TFT100	CAN ASKOLL
822	Current Range	2	Unsigned	0	0xFF FF	-	km		TFT100	CAN ASKOLL

824	SoC Battery	1	Unsigned	0	100	-	%	Indicates currently measured battery SoC in %.	TFT100	CAN ASKOLL
824	SoC Battery	1	Unsigned	0	100	-	%	Indicates currently measured battery SoC.	TFT100	CAN ASKOLL
828	SoC Battery	2	Unsigned	0	0xFFFF	-	Ah	Indicates remaining battery capacity in Ah.	TFT100	CAN ASKOLL
828	Remaining Battery	2	Unsigned	0	0xFFFF	-	Ah	Indicates remaining battery capacity.	TFT100	CAN ASKOLL
833	Total Distance	4	Unsigned	0	0xFFFF	-	km	Indicates measured vehicle total traveled distance.	TFT100	CAN ASKOLL
835	Vehicle Speed	1	Unsigned	0	0xFF	-	km/h	Indicates currently measured vehicle speed.	TFT100	CAN ASKOLL
837	Ignition Fast Status	1	Unsigned	0	1	-	-	Indicates if ignition is active or not. 0 - not active, 1 - active.	TFT100	CAN ASKOLL
843	Helmet Status	1	Unsigned	0	1	-	-	Indicates if Helmet is in or not. 0 - not in, 1 - in.	TFT100	CAN ASKOLL
844	Top Case Sensor	1	Unsigned	0	1	-	-	Indicates if Top Case is open or closed. 0 - closed, 1 - open.	TFT100	CAN ASKOLL
845	Central Stand Up	1	Unsigned	0	1	-	-	Indicates if central stand is up or down. 0 - down, 1 - up.	TFT100	CAN ASKOLL
846	Vehicle Lock	1	Unsigned	0	1	-	-	Indicates if vehicle is locked or not. 0 - unlocked, 1 - locked	TFT100	CAN ASKOLL
847	Over-Under Temperature	1	Unsigned	0	1	-	-	Indicates if there is battery over or under temperature warning. 0 - normal temperature, 1 - over-under temperature	TFT100	CAN ASKOLL
848	Regeneration Disabled	1	Unsigned	0	1	-	-	Indicates if battery regeneration is disabled. 0 - enabled, 1 - disabled.	TFT100	CAN ASKOLL
849	Battery On/Off	1	Unsigned	0	1	-	-	Indicates if battery is on or off. 0 - Battery Off, 1 - Battery On	TFT100	CAN ASKOLL
850	Warning UnderVoltage	1	Unsigned	0	1	-	-	Indicates if there is battery undervoltage warning. 0 - no battery undervoltage, 1 - battery undervoltage.	TFT100	CAN ASKOLL
851	Warning OverVoltage	1	Unsigned	0	1	-	-	Indicates if there is battery overvoltage warning. 0 - No battery overvoltage, 1 - battery overvoltage.	TFT100	CAN ASKOLL
852	Warning OverCurrent	1	Unsigned	0	1	-	-	Indicates if there is battery overcurrent warning. 0 - No battery overcurrent, 1 - battery overcurrent.	TFT100	CAN ASKOLL
853	Warning Short Circuit	1	Unsigned	0	1	-	-	Indicates if there is battery short circuit warning. 0 - No battery short circuit, 1 - battery short circuit.	TFT100	CAN ASKOLL
20015	Seat Sensor	1	Unsigned	0	1	-	-	Seat Sensor status	TFT100	CAN ASKOLL
20016	Central Stand Lock	1	Unsigned	0	1	-	-	Central Stand Lock status	TFT100	CAN ASKOLL

Manual CAN I/O elements

Property ID in AVL packet	Property Name	Bytes	Type	Value range		Multiplier	Units	Description	HW Support	Parameter Group
				Min	Max					
900	Manual CAN 0	8	Unsigned	0	0xFFFFFFFFFFFF	-	-	Manual CAN0	TFT100	Manual CAN
901	Manual CAN 1	8	Unsigned	0	0xFFFFFFFFFFFF	-	-	Manual CAN1	TFT100	Manual CAN
902	Manual CAN 2	8	Unsigned	0	0xFFFFFFFFFFFF	-	-	Manual CAN2	TFT100	Manual CAN
903	Manual CAN 3	8	Unsigned	0	0xFFFFFFFFFFFF	-	-	Manual CAN3	TFT100	Manual CAN
904	Manual CAN 4	8	Unsigned	0	0xFFFFFFFFFFFF	-	-	Manual CAN4	TFT100	Manual CAN

905	Manual CAN 5	8	Unsigned	0	0xFFFFFFFFFFFF FFFF	-	-	Manual CAN5	TFT100	Manual CAN
906	Manual CAN 6	8	Unsigned	0	0xFFFFFFFFFFFF FFFF	-	-	Manual CAN6	TFT100	Manual CAN
907	Manual CAN 7	8	Unsigned	0	0xFFFFFFFFFFFF FFFF	-	-	Manual CAN7	TFT100	Manual CAN
908	Manual CAN 8	8	Unsigned	0	0xFFFFFFFFFFFF FFFF	-	-	Manual CAN8	TFT100	Manual CAN
909	Manual CAN 9	8	Unsigned	0	0xFFFFFFFFFFFF FFFF	-	-	Manual CAN9	TFT100	Manual CAN
910	Manual CAN 10	8	Unsigned	0	0xFFFFFFFFFFFF FFFF	-	-	Manual CAN10	TFT100	Manual CAN
911	Manual CAN 11	8	Unsigned	0	0xFFFFFFFFFFFF FFFF	-	-	Manual CAN11	TFT100	Manual CAN
912	Manual CAN 12	8	Unsigned	0	0xFFFFFFFFFFFF FFFF	-	-	Manual CAN12	TFT100	Manual CAN
913	Manual CAN 13	8	Unsigned	0	0xFFFFFFFFFFFF FFFF	-	-	Manual CAN13	TFT100	Manual CAN
914	Manual CAN 14	8	Unsigned	0	0xFFFFFFFFFFFF FFFF	-	-	Manual CAN14	TFT100	Manual CAN
915	Manual CAN 15	8	Unsigned	0	0xFFFFFFFFFFFF FFFF	-	-	Manual CAN15	TFT100	Manual CAN
916	Manual CAN 16	8	Unsigned	0	0xFFFFFFFFFFFF FFFF	-	-	Manual CAN16	TFT100	Manual CAN
917	Manual CAN 17	8	Unsigned	0	0xFFFFFFFFFFFF FFFF	-	-	Manual CAN17	TFT100	Manual CAN
918	Manual CAN 18	8	Unsigned	0	0xFFFFFFFFFFFF FFFF	-	-	Manual CAN18	TFT100	Manual CAN
919	Manual CAN 19	8	Unsigned	0	0xFFFFFFFFFFFF FFFF	-	-	Manual CAN19	TFT100	Manual CAN
920	Manual CAN 20	8	Unsigned	0	0xFFFFFFFFFFFF FFFF	-	-	Manual CAN20	TFT100	Manual CAN
921	Manual CAN 21	8	Unsigned	0	0xFFFFFFFFFFFF FFFF	-	-	Manual CAN21	TFT100	Manual CAN
922	Manual CAN 22	8	Unsigned	0	0xFFFFFFFFFFFF FFFF	-	-	Manual CAN22	TFT100	Manual CAN
923	Manual CAN 23	8	Unsigned	0	0xFFFFFFFFFFFF FFFF	-	-	Manual CAN23	TFT100	Manual CAN
924	Manual CAN 24	8	Unsigned	0	0xFFFFFFFFFFFF FFFF	-	-	Manual CAN24	TFT100	Manual CAN
925	Manual CAN 25	8	Unsigned	0	0xFFFFFFFFFFFF FFFF	-	-	Manual CAN25	TFT100	Manual CAN
926	Manual CAN 26	8	Unsigned	0	0xFFFFFFFFFFFF FFFF	-	-	Manual CAN26	TFT100	Manual CAN
927	Manual CAN 27	8	Unsigned	0	0xFFFFFFFFFFFF FFFF	-	-	Manual CAN27	TFT100	Manual CAN
928	Manual CAN 28	8	Unsigned	0	0xFFFFFFFFFFFF FFFF	-	-	Manual CAN28	TFT100	Manual CAN
929	Manual CAN 29	8	Unsigned	0	0xFFFFFFFFFFFF FFFF	-	-	Manual CAN29	TFT100	Manual CAN

Default J1939 I/O elements

Property ID in AVL packet	Property Name	Bytes	Type	Value range		Multiplier	Units	Description	HW Support	Parameter Group
				Min	Max					
930	Accelerator Pedal 1 Low Idle Switch	8	Unsigned	0	3	-	-	Switch signal which indicates the state of the accelerator pedal 1 low idle switch. 0 - Accelerator pedal 1 not in low idle condition 1 - Accelerator pedal 1 in low idle condition 2 - Error 3 - Not available	TFT100	Default J1939

931	Accelerator Pedal Kickdown Switch	8	Unsigned	0	3	-	-	Switch signal which indicates whether the accelerator pedal kickdown switch is opened or closed. 0 - Kickdown passive 1 - Kickdown active 2 - Error 3 - Not available	TFT100	Default J1939
932	Road Speed Limit Status	8	Unsigned	0	3	-	-	Status (active or not active) of the system used to limit maximum vehicle velocity. 0 - Active 1 - Not Active 2 - Error 3 - Not available	TFT100	Default J1939
933	Accelerator Pedal 2 Low Idle Switch	8	Unsigned	0	3	-	-	Switch signal which indicates the state of the accelerator pedal 2 low idle switch. 0 - Accelerator pedal 2 not in low idle condition 1 - Accelerator pedal 2 in low idle condition 2 - Error 3 - Not available	TFT100	Default J1939
934	Accelerator Pedal Position 1	8	Unsigned	0	100	-	%	This parameter is intended for the primary accelerator control in an application.	TFT100	Default J1939
936	Engine Percent Load At Current Speed	8	Unsigned	0	250	-	%	The ratio of actual engine percent torque (indicated) to maximum indicated torque available at the current engine speed, clipped to zero torque during engine braking.	TFT100	Default J1939
937	Remote Accelerator Pedal Position	8	Unsigned	0	100	-	%	The ratio of actual position of the remote analog engine speed/torque request input device (such as an accelerator pedal or throttle lever) to the maximum position of the input device.	TFT100	Default J1939
938	Accelerator Pedal 2 Position	8	Unsigned	0	10	-	%	The ratio of actual position of the second analog engine speed/torque request input device (such as an accelerator pedal or throttle lever) to the maximum position of the input device. This parameter is intended for secondary accelerator control in an application.	TFT100	Default J1939
939	Vehicle Acceleration Rate Limit Status	8	Unsigned	0	3	-	-	Status (active or not active) of the system used to limit maximum forward vehicle acceleration. 0 - Limit not active 1 - Limit active 2 - Reserved 3 - Not available	TFT100	Default J1939
940	Momentary Engine Maximum Power Enable Feedback	8	Unsigned	0	3	-	-	Momentarily requesting Engine Maximum Power Enable - feature support feedback 0 - disabled 1 - supported 2 - reserved 3 - don't care	TFT100	Default J1939
941	DPF Thermal Management Active	8	Unsigned	0	3	-	-	Indicates that the exhaust temperatures have been elevated for regeneration of the diesel particulate filter aftertreatment system or in preparation of regeneration of the diesel particulate aftertreatment system. 0 - DPF Thermal Management is not active 1 - DPF Thermal Management is active 2 - Reserved 3 - Don't care	TFT100	Default J1939

942	SCR Thermal Management Active	8	Unsigned	0	3	-	-	Indicates that the exhaust temperatures have been elevated for regeneration of the SCR aftertreatment system or in preparation of regeneration of the SCR aftertreatment system. 0 - SCR Thermal Management is not active 1 - SCR Thermal Management is active 2 - Reserved 3 - Don't care	TFT100	Default J1939
943	Actual Maximum Available Engine - Percent Torque	8	Unsigned	0	100	-	%	This is the maximum amount of torque that the engine can immediately deliver as a percentage of the reference engine torque.	TFT100	Default J1939
944	Estimated Pumping - Percent Torque	8	Unsigned	-125	125	-	%	The calculated torque that indicates the estimated amount of torque loss due to the engine air handling system.	TFT100	Default J1939
945	Engine Torque Mode	8	Unsigned	0	15	-	-	State signal which indicates which engine torque mode is currently generating, limiting, or controlling the torque. Mode 0 - "No request": engine torque may range from 0 to full load only due to low idle governor output. Modes 1 to 14 indicate that there is either a torque request or the identified function is currently controlling the engine: engine torque may range from 0 (no fueling) to the upper limit. Mode 15 -	TFT100	Default J1939
946	Actual Engine - Percent Torque (Fractional)	8	Unsigned	0	0.875	-	%	This parameter displays an additional torque in percent of the reference engine torque. 0 - +0.000% 1 - +0.125% ... 9 - +0.875% 10 to 15 - not available	TFT100	Default J1939
947	Driver's Demand Engine - Percent Torque	8	Unsigned	-125	125	-	%	The requested torque output of the engine by the driver.	TFT100	Default J1939
948	Actual Engine - Percent Torque	8	Unsigned	-125	125	-	%	The calculated output torque of the engine.	TFT100	Default J1939
949	Engine Speed	8	Unsigned	0	8031.875	-	rpm	Actual engine speed which is calculated over a minimum crankshaft angle of 720 degrees divided by the number of cylinders.	TFT100	Default J1939
950	Source Address of Controlling Device for Engine Control	8	Unsigned	0	255	-	SA	The source address of the SAE J1939 device currently controlling the engine.	TFT100	Default J1939

								There are several phases in a starting action and different reasons why a start cannot take place. 0 - start not requested 1 - starter active but not engaged 2 - starter active and engaged 3 - start finished; starter not active after having been actively engaged (after 50ms mode goes to 0) 4 - starter inhibited due to engine already running 5 - starter inhibited due to engine not ready for start (preheating) 6 - starter inhibited due to driveline engaged or other transmission inhibit 7 - starter inhibited due to active immobilizer 8 - starter inhibited due to starter over-temp 9 - starter inhibited due to intake air shutoff valve being active 10 - starter inhibited due to active emissions control system condition 11 - starter inhibited due to ignition key cycle required 12 - starter inhibited - reason unknown 13 - error (legacy implementation only, use 14) 14 - error 15 - not available		
951	Engine Starter Mode	8	Unsigned	0	15	-	-		TFT100	Default J1939
952	Engine Demand - Percent Torque	8	Unsigned	-125	125	-	%	The calculated torque that indicates the estimated amount of torque loss due to the engine air handling system.	TFT100	Default J1939
953	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature	8	Unsigned	-273	1734.96875	-	°C	Temperature of engine combustion byproducts entering the diesel oxidation catalyst in exhaust bank 1.	TFT100	Default J1939
954	Aftertreatment 1 Diesel Oxidation Catalyst Outlet Temperature	8	Unsigned	-273	1734.96875	-	°C	Temperature of engine combustion byproducts leaving the diesel oxidation catalyst exhaust in exhaust bank 1.	TFT100	Default J1939
955	Aftertreatment 1 Diesel Oxidation Catalyst Differential Pressure	8	Unsigned	0	6425.5	-	kPa	Exhaust differential pressure measured between the intake and exhaust of a diesel oxidation catalyst in exhaust bank 1.	TFT100	Default J1939
956	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature Preliminary FMI	8	Unsigned	0	31	-	-	Used to identify the applicable J1939-73 FMI detected in the diesel oxidation catalyst intake temperature sensor by the manufacturer's sensor control software in exhaust bank 1. A value of 31 is sent to indicate that no failure has been detected or this parameter is not supported.	TFT100	Default J1939
957	Aftertreatment 1 Diesel Oxidation Catalyst Outlet Temperature Preliminary FMI	8	Unsigned	0	31	-	-	Used to identify the applicable J1939-73 FMI detected in the diesel oxidation catalyst outlet gas temperature sensor by the manufacturer's sensor control software in exhaust bank 1. A value of 31 is sent to indicate that no failure has been detected or this parameter is not supported.	TFT100	Default J1939
958	Aftertreatment 1 Diesel Oxidation Catalyst Differential Pressure Preliminary FMI	8	Unsigned	0	31	-	-	Used to identify the applicable J1939-73 FMI detected in the diesel oxidation catalyst differential pressure sensor by the manufacturer's sensor control software in exhaust bank 1. A value of 31 is sent to indicate that no failure has been detected or this parameter is not supported.	TFT100	Default J1939
959	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent	8	Unsigned	0	250	-	%	Indicates the soot load percent of diesel particulate filter 1.	TFT100	Default J1939

960	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent	8	Unsigned	0	250	-	%	Indicates the ash load percent of diesel particulate filter 1.	TFT100	Default J1939
961	Aftertreatment 1 Diesel Particulate Filter Time Since Last Active Regeneration	8	Unsigned	0	4211081215	-	s	Indicates the time since the last active regeneration event of diesel particulate filter 1.	TFT100	Default J1939
962	Aftertreatment 1 Diesel Particulate Filter Soot Load Regeneration Threshold	8	Unsigned	0	160.6375	-	%	This parameter indicates the value that will first cause DPF regeneration in aftertreatment 1.	TFT100	Default J1939
963	Aftertreatment 1 Exhaust Temperature 2	8	Unsigned	-273	1734.96875	-	°C	The reading from the exhaust temperature sensor located midstream of the other two temperature sensors in the aftertreatment system in exhaust bank 1.	TFT100	Default J1939
964	Aftertreatment 1 Diesel Particulate Filter Intermediate Temperature	8	Unsigned	-273	1734.96875	-	°C	Temperature of engine combustion byproducts at a mid-point in the diesel particulate filter in exhaust bank 1.	TFT100	Default J1939
965	Aftertreatment 1 Diesel Particulate Filter Differential Pressure	8	Unsigned	0	6425.5	-	kPa	Exhaust differential pressure measured between the intake and exhaust of a diesel particulate filter in exhaust bank 1.	TFT100	Default J1939
966	Aftertreatment 1 Exhaust Temperature 2 Preliminary FMI	8	Unsigned	0	31	-	-	Used to identify the applicable J1939-73 FMI detected in the exhaust temperature 2 sensor by the manufacturer's sensor control software in exhaust bank 1. In the case of multiple failures the most severe is communicated. A value of 31 is sent to indicate that no failure has been detected or this parameter is not supported.	TFT100	Default J1939
967	Aftertreatment 1 Diesel Particulate Filter Differential Pressure Preliminary FMI	8	Unsigned	0	31	-	-	Used to identify the applicable J1939-73 FMI detected in the diesel particulate filter differential pressure sensor by the manufacturer's sensor control software in exhaust bank 1. In the case of multiple failures the most severe is communicated. A value of 31 is sent to indicate that no failure has been detected or this parameter is not supported.	TFT100	Default J1939
968	Aftertreatment 1 Diesel Particulate Filter Intermediate Temperature Preliminary FMI	8	Unsigned	0	31	-	-	Used to identify the applicable J1939-73 FMI detected in the diesel particulate filter intermediate temperature sensor by the manufacturer's sensor control software in exhaust bank 1. In the case of multiple failures the most severe is communicated. A value of 31 is sent to indicate that no failure has been detected or this parameter is not supported.	TFT100	Default J1939
969	Aftertreatment 1 Exhaust Temperature 1	8	Unsigned	-273	1734.96875	-	°C	The reading from the exhaust temperature sensor located farthest upstream in the aftertreatment system in exhaust bank 1.	TFT100	Default J1939
970	Aftertreatment 1 Diesel Particulate Filter Intake Temperature	8	Unsigned	-273	1734.96875	-	°C	Temperature of engine combustion byproducts entering the diesel particulate filter in exhaust bank 1.	TFT100	Default J1939
971	Aftertreatment 1 Exhaust Temperature 1 Preliminary FMI	8	Unsigned	0	31	-	-	Used to identify the applicable J1939-73 FMI detected in the exhaust temperature 1 sensor by the manufacturer's sensor control software in exhaust bank 1. In the case of multiple failures the most severe is communicated. A value of 31 is sent to indicate that no failure has been detected or this parameter is not supported.	TFT100	Default J1939

972	Aftertreatment 1 Diesel Particulate Filter Intake Temperature Preliminary FMI	8	Unsigned	0	31	-	-	Used to identify the applicable J1939-73 FMI detected in the diesel particulate filter intake temperature sensor by the manufacturer's sensor control software in exhaust bank 1. In the case of multiple failures the most severe is communicated. A value of 31 is sent to indicate that no failure has been detected or this parameter is not supported.	TFT100	Default J1939
973	Trip Fuel (Gaseous)	8	Unsigned	0	2105 5406 07.5	-	kg	Total fuel consumed (trip drive fuel + trip PTO governor moving fuel + trip PTO governor non-moving fuel + trip idle fuel) since the last trip reset.	TFT100	Default J1939
974	Total Fuel Used (Gaseous)	8	Unsigned	0	2105 5406 07.5	-	kg	Total fuel consumed (trip drive fuel + trip PTO governor moving fuel + trip PTO governor non-moving fuel + trip idle fuel) over the life of the engine.	TFT100	Default J1939
989	Trip Vehicle Distance	8	Unsigned	0	5263 8515 1.875	-	km	Distance traveled during all or part of a journey.	TFT100	Default J1939
990	Total Vehicle Distance	8	Unsigned	0	5263 8515 1.875	-	km	Accumulated distance traveled by vehicle during its operation.	TFT100	Default J1939
991	Engine Total Hours of Operation	8	Unsigned	0	2105 5406 0.75	-	h	Accumulated time of operation of engine.	TFT100	Default J1939
992	Engine Total Revolutions	8	Unsigned	0	4211 0812 1500 0	-	r	Accumulated number of revolutions of engine crankshaft during its operation.	TFT100	Default J1939
993	Total Vehicle Hours	8	Unsigned	0	2105 5406 0.75	-	h	Accumulated time of operation of vehicle.	TFT100	Default J1939
994	Total Power Takeoff Hours	8	Unsigned	0	2105 5406 0.75	-	h	Accumulated time of operation of power takeoff device.	TFT100	Default J1939
995	Engine Trip Fuel	8	Unsigned	0	2105 5406 07.5	-	l	Fuel consumed during all or part of a journey.	TFT100	Default J1939
996	Engine Total Fuel Used	8	Unsigned	0	2105 5406 07.5	-	l	Accumulated amount of fuel used during vehicle operation.	TFT100	Default J1939
1002	Engine Coolant Temperature	8	Unsigned	-40	210	-	°C	Temperature of liquid found in engine cooling system.	TFT100	Default J1939
1003	Engine Fuel 1 Temperature 1	8	Unsigned	-40	210	-	°C	Temperature of fuel (or gas) of the first fuel type.	TFT100	Default J1939
1004	Engine Oil Temperature 1	8	Unsigned	-273	1734. 9687 5	-	°C	Temperature of the engine lubricant.	TFT100	Default J1939
1005	Engine Turbocharger 1 Oil Temperature	8	Unsigned	-273	1734. 9687 5	-	°C	Temperature of the turbocharger lubricant.	TFT100	Default J1939
1006	Engine Intercooler Temperature	8	Unsigned	-40	210	-	°C	Temperature of liquid found in the intercooler located after the turbocharger.	TFT100	Default J1939
1007	Engine Charge Air Cooler Thermostat Opening	8	Unsigned	0	100	-	%	The current position of the thermostat used to regulate the temperature of the engine charge air cooler. A value of 0% represents the thermostat being completely closed and 100% represents the thermostat being completely open.	TFT100	Default J1939
1008	Engine Fuel Delivery Pressure	8	Unsigned	0	1000	-	kPa	Gage pressure of fuel in system as delivered from supply pump to the injection pump.	TFT100	Default J1939
1009	Engine Extended Crankcase Blow-by Pressure	8	Unsigned	0	12.5	-	kPa	Differential crankcase blow-by pressure as measured through a tube with a venturi.	TFT100	Default J1939

1010	Engine Oil Level	8	Unsigned	0	100	-	%	Ratio of current volume of engine sump oil to maximum required volume.	TFT100	Default J1939
1011	Engine Oil Pressure 1	8	Unsigned	0	1000	-	kPa	Gage pressure of oil in engine lubrication system as provided by oil pump.	TFT100	Default J1939
1012	Engine Crankcase Pressure 1	8	Unsigned	-250	251.99	-	kPa	First instance of the gage pressure inside engine crankcase.	TFT100	Default J1939
1013	Engine Coolant Pressure 1	8	Unsigned	0	500	-	kPa	Gage pressure of liquid found in engine cooling system.	TFT100	Default J1939
1014	Engine Coolant Level 1	8	Unsigned	0	100	-	%	Ratio of volume of liquid found in engine cooling system to total cooling system volume.	TFT100	Default J1939
1015	Two Speed Axle Switch	8	Unsigned	0	3	-	-	Switch signal which indicates the current axle range. 0 - Low speed range 1 - High speed range 2 - Error 3 - Not available	TFT100	Default J1939
1016	Two Speed Axle Switch	8	Unsigned	0	3	-	-	Switch signal which indicates when the parking brake is set. 0 - Parking brake not set 1 - Parking brake set 2 - Error 3 - Not available	TFT100	Default J1939
1017	Cruise Control Pause Switch	8	Unsigned	0	3	-	-	Switch signal which indicates the position of the Cruise Control Pause Switch used on Remote Cruise Control applications. The Cruise Control Pause Switch signal temporarily disables the Cruise Control function. 0 - Off 1 - On 2 - Error Indicator 3 - Take No Action	TFT100	Default J1939
1018	Park Brake Release Inhibit Request	8	Unsigned	0	3	-	-	Park Brake Release Inhibit Request signals the desire that an applied park brake remain applied and limit the ability of the vehicle to be moved. 0 - Park Brake Release Inhibit not requested 1 - Park Brake Release Inhibit requested 2 - SAE reserved 3 - Unavailable	TFT100	Default J1939
1019	Wheel-Based Vehicle Speed	8	Unsigned	0	250.996	-	km/h	Speed of the vehicle as calculated from wheel or tailshaft speed.	TFT100	Default J1939
1020	Cruise Control Active	8	Unsigned	0	3	-	-	Cruise control is switched on. 0 - Cruise control switched off 1 - Cruise control switched on 2 - Error 3 - Not available	TFT100	Default J1939
1021	Cruise Control Enable Switch	8	Unsigned	0	3	-	-	Switch signal which indicates that it is possible to manage the cruise control function. 0 - Cruise control disabled 1 - Cruise control enabled 2 - Error 3 - Not available	TFT100	Default J1939
1022	Brake Switch	8	Unsigned	0	3	-	-	Switch signal which indicates that the driver operated brake foot pedal is being pressed. 0 - Brake pedal released 1 - Brake pedal depressed 2 - Error 3 - Not Available	TFT100	Default J1939
1023	Clutch Switch	8	Unsigned	0	3	-	-	Switch signal which indicates that the clutch pedal is being pressed. 0 - Clutch pedal released 1 - Clutch pedal 2 - Error 3 - Not available	TFT100	Default J1939

1024	Cruise Control Set Switch	8	Unsigned	0	3	-	-	Switch signal of the cruise control activator which indicates that the activator is in the position "set." 0 - Cruise control activator not in the position "set" 1 - Cruise control activator in position "set" 2 - Error 3 - Not available	TFT100	Default J1939
1025	Cruise Control Coast (Decelerate) Switch	8	Unsigned	0	3	-	-	Switch signal of the cruise control activator which indicates that the activator is in the position "coast (decelerate)." 0 - Cruise control activator not in the position "coast" 1 - Cruise control activator in position "coast" 2 - Error 3 - Not available	TFT100	Default J1939
1026	Cruise Control Resume Switch	8	Unsigned	0	3	-	-	Switch signal of the cruise control activator which indicates that the activator is in the position "resume." 0 - Cruise control activator not in the position "resume" 1 - Cruise control activator in position "resume" 2 - Error 3 - Not available	TFT100	Default J1939
1027	Cruise Control Accelerate Switch	8	Unsigned	0	3	-	-	Switch signal of the cruise control activator which indicates that the activator is in the position "accelerate." 0 - Cruise control activator not in the position "accelerate" 1 - Cruise control activator in position "accelerate" 2 - Error 3 - Not available	TFT100	Default J1939
1028	Cruise Control Set Speed	8	Unsigned	0	250.9 96	-	km/h	Value of set (chosen) velocity of velocity control system. Cruise control is switched on. It is not ensured that the engine is controlled by cruise control, as in the case of a large driver's demand the engine is controlled by the driver while cruise control is active (maximum selection of cruise control and driver's demand).	TFT100	Default J1939
1029	PTO Governor State	8	Unsigned	0	3	-	-	Cruise control is switched off 1 - Cruise control switched on 2 - Error 3 - Not available	TFT100	Default J1939

								This parameter is used to indicate the current state or mode of operation by the power takeoff (PTO) governor. 0 - Off/Disabled 1 - Hold 2 - Remote Hold 3 - Standby 4 - Remote Standby 5 - Set 6 - Decelerate/Coast 7 - Resume 8 - Accelerate 9 - Accelerator Override 10 - Preprogrammed set speed 1 11 - Preprogrammed set speed 2 12 - Preprogrammed set speed 3 13 - Preprogrammed set speed 4 14 - Preprogrammed set speed 5 15 - Preprogrammed set speed 6 16 - Preprogrammed set speed 7 17 - Preprogrammed set speed 8 18 - PTO set speed memory 1 19 - PTO set speed memory 2 20 - PTO set speed memory 3 21 - Reserved 22 - Reserved 23 - Reserved 24 - Reserved 25 - Reserved 26 - Reserved 27 - Reserved 28 - Reserved 29 - Reserved 30 - Reserved 31 - Not available		
1030	Cruise Control States	8	Unsigned	0	31	-	-	This parameter is used to indicate the current state, or mode, of operation by the cruise control device. This is a status parameter. 0 - Off/Disabled 1 - Hold 2 - Accelerate 3 - Decelerate 4 - Resume 5 - Set 6 - Accelerator Override 7 - Not available Switch signal which indicates the position of the idle increment switch. 0 - Off 1 - On 2 - Error 3 - Not available	TFT1 00	Default J1939
1031	Engine Idle Increment Switch	8	Unsigned	0	7	-	-	Switch signal which indicates the position of the idle decrement switch. 0 - Off 1 - On 2 - Error 3 - Not available	TFT1 00	Default J1939
1032	Engine Idle Decrement Switch	8	Unsigned	0	3	-	-	Switch signal which indicates the position of the idle decrement switch. 0 - Off 1 - On 2 - Error 3 - Not available	TFT1 00	Default J1939
1033	Engine Diagnostic Test Mode Switch	8	Unsigned	0	3	-	-	Switch signal which indicates the position of the engine diagnostic test mode switch. 0 - Off 1 - On 2 - Error 3 - Not available	TFT1 00	Default J1939
1033	Engine Diagnostic Test Mode Switch	8	Unsigned	0	3	-	-	Switch signal which indicates the position of the engine diagnostic test mode switch. 0 - Off 1 - On 2 - Error 3 - Not available	TFT1 00	Default J1939

1034	Engine Shutdown Override Switch	8	Unsigned	0	3	-	-	Switch signal which indicates the position of the engine shutdown override switch. This switch function allows the operator to override an impending engine shutdown. 0 - Off 1 - On 2 - Error 3 - Not available	TFT100	Default J1939
1035	Engine Fuel Rate	8	Unsigned	0	3212.75	-	l/h	Amount of fuel consumed by engine per unit of time.	TFT100	Default J1939
1036	Engine Instantaneous Fuel Economy	8	Unsigned	0	125.498046875	-	km/L	Current fuel economy at current vehicle velocity.	TFT100	Default J1939
1037	Engine Average Fuel Economy	8	Unsigned	0	125.498046875	-	km/L	Average of instantaneous fuel economy for that segment of vehicle operation of interest.	TFT100	Default J1939
1038	Engine Throttle Valve 1 Position 1	8	Unsigned	0	100	-	%	The position of the valve used to regulate the supply of a fluid, usually air or fuel/air mixture, to an engine. 0% represents no supply and 100% is full supply.	TFT100	Default J1939
1039	Engine Throttle Valve 2 Position	8	Unsigned	0	100	-	%	The sensed position feedback of the valve, coming from a second electrical actuator for a second throttle plate, used to regulate the supply of a fluid, usually air or fuel/air mixture. 0% represents no supply and 100% is full supply.	TFT100	Default J1939
1040	Barometric Pressure	8	Unsigned	0	125	-	kPa	Absolute air pressure of the atmosphere.	TFT100	Default J1939
1041	Cab Interior Temperature	8	Unsigned	-273	1734.96875	-	°C	Temperature of air inside the part of the vehicle that encloses the driver and vehicle operating controls.	TFT100	Default J1939
1042	Ambient Air Temperature	8	Unsigned	-273	1734.96875	-	°C	Temperature of air surrounding vehicle.	TFT100	Default J1939
1043	Engine Intake 1 Air Temperature	8	Unsigned	-40	210	-	°C	Temperature of air entering vehicle air induction system.	TFT100	Default J1939
1044	Road Surface Temperature	8	Unsigned	-273	1734.96875	-	°C	Indicated temperature of road surface over which vehicle is operating.	TFT100	Default J1939
1045	Aftertreatment 1 Diesel Particulate Filter Intake Pressure	8	Unsigned	0	125	-	kPa	Exhaust pressure as a result of particle accumulation on filter media placed in the exhaust stream.	TFT100	Default J1939
1046	Engine Intake Manifold #1 Pressure	8	Unsigned	0	500	-	kPa	The gauge pressure measurement of the air intake manifold. If there are multiple air pressure sensors in the intake stream, this is the last one in flow direction before entering the combustion chamber. This should be the pressure used to drive gauges and displays.	TFT100	Default J1939
1047	Engine Intake Manifold 1 Temperature	8	Unsigned	-40	210	-	°C	Temperature of pre-combustion air found in intake manifold of engine air supply system.	TFT100	Default J1939
1048	Engine Intake Air Pressure	8	Unsigned	0	500	-	kPa	Absolute air pressure at input port to intake manifold or air box.	TFT100	Default J1939
1049	Engine Air Filter 1 Differential Pressure	8	Unsigned	0	12.5	-	kPa	Change in engine air system pressure, measured across the filter, due to the filter and any accumulation of solid foreign matter on or in the filter.	TFT100	Default J1939
1050	Engine Exhaust Temperature	8	Unsigned	-273	1734.96875	-	°C	Temperature of combustion byproducts leaving the engine.	TFT100	Default J1939
1051	Engine Coolant Filter Differential Pressure	8	Unsigned	0	125	-	kPa	Change in coolant pressure, measured across the filter, due to the filter and any accumulation of solid or semisolid matter on or in the filter.	TFT100	Default J1939

1052	SLI Battery 1 Net Current	8	Unsigned	-125	125	-	A	Net flow of electrical current into/out of the first battery or first set of batteries used for starting the engine, for lighting, and for ignition (SLI).	TFT100	Default J1939
1053	Alternator Current	8	Unsigned	0	250	-	A	Measure of electrical current flow from the alternator.	TFT100	Default J1939
1054	Charging System Potential (Voltage)	8	Unsigned	0	3212.75	-	V	Electrical potential measured at the charging system output. The charging system may be any device charging the batteries. This includes alternators, generators, solid state charger and other charging devices.	TFT100	Default J1939
1055	Battery Potential / Power Input 1	8	Unsigned	0	3212.75	-	V	This parameter measures the first source of battery potential as measured at the input of the ECU/actuator etc. coming from one or more batteries, irrespective of the distance between the component and the battery.	TFT100	Default J1939
1056	Key Switch Battery Potential	8	Unsigned	0	3212.75	-	V	Battery potential measured at the input of the electronic control unit supplied through a key switch or similar switching device.	TFT100	Default J1939
1057	Transmission Clutch 1 Pressure	8	Unsigned	0	4000	-	kPa	Gage pressure of oil within a wet clutch.	TFT100	Default J1939
1058	Transmission Oil Level 1	8	Unsigned	0	100	-	%	First instance of a transmission oil level indicator. Conveys the ratio of volume of transmission sump oil to recommended volume.	TFT100	Default J1939
1059	Transmission Filter Differential Pressure	8	Unsigned	0	500	-	kPa	Change in transmission fluid pressure, measured after the filter, due to accumulation of solid or semisolid material on or in the filter.	TFT100	Default J1939
1060	Transmission 1 Oil Pressure	8	Unsigned	0	4000	-	kPa	Gage pressure of lubrication fluid in transmission 1, measured after pump.	TFT100	Default J1939
1061	Transmission Oil Temperature 1	8	Unsigned	-273	1734.96875	-	°C	First instance of transmission lubricant temperature.	TFT100	Default J1939
1062	Transmission Oil Level 1 High / Low	8	Unsigned	-62.5	62.5	-	1	First instance of a transmission oil level indicator. Conveys the amount of current volume of transmission sump oil compared to recommended volume. Positive values indicate overflow. Zero means the transmission fluid is filled to the recommended level.	TFT100	Default J1939
1063	Transmission Oil Level 1 Countdown Timer	8	Unsigned	0	15	-	-	Countdown timer for the first instance of a transmission oil level indicator. Once all vehicle conditions (such as vehicle stopped, etc) are met, some transmissions may require a 'settling time' to allow the fluid level to normalize. This parameter indicates how much of the required settling time remains. 0 - less than 1 minute 1 - One minute 2 - Two minutes 3 - Three minutes 4 - Four minutes 5 - Five minutes 6 - Six minutes 7 - Seven minutes 8 - Eight minutes 9 - Nine minutes 10 - Ten minutes 11 - Eleven minutes 12 - Twelve minutes 13 - Thirteen minutes 14 - Error 15 - Not Available	TFT100	Default J1939

									Measurement status for the first instance of a transmission oil level indicator. If conditions are not acceptable, this parameter conveys to the operator what prevents conditions from being acceptable. 0 - Conditions valid for transmission oil level measurement 1 - Conditions not valid - Settling timer still counting down 2 - Conditions not valid - Transmission in gear 3 - Conditions not valid - Transmission fluid temperature too low 4 - Conditions not valid - Transmission fluid temperature too high 5 - Conditions not valid - Vehicle moving; output shaft speed too high 6 - Conditions not valid - Vehicle not level 7 - Conditions not valid - Engine speed too low 8 - Conditions not valid - Engine speed too high 9 - Conditions not valid - No request for reading 10 - Not defined 11 - Not defined 12 - Not defined 13 - Conditions not valid - Other 14 - Error 15 - Not available		
1064	Transmission Oil Level 1 Measurement Status	8	Unsigned	0	15	-	-			TFT100	Default J1939
1065	Washer Fluid Level	8	Unsigned	0	100	-	%	Ratio of volume of liquid to total container volume of fluid reservoir in windshield wash system.		TFT100	Default J1939
1066	Fuel Level 1	8	Unsigned	0	100	-	%	Ratio of volume of fuel to the total volume of fuel storage container.		TFT100	Default J1939
1067	Engine Fuel Filter Differential Pressure	8	Unsigned	0	500	-	kPa	Change in fuel delivery pressure, measured across the filter, due to accumulation of solid or semisolid matter on the filter element.		TFT100	Default J1939
1068	Engine Oil Filter Differential Pressure	8	Unsigned	0	125	-	kPa	Change in engine oil pressure, measured across the filter, due to the filter and any accumulation of solid or semisolid material on or in the filter.		TFT100	Default J1939
1069	Cargo Ambient Temperature	8	Unsigned	-273	1734.5	-	°C	Temperature of air inside vehicle container used to accommodate cargo.		TFT100	Default J1939
1070	Fuel Level 2	8	Unsigned	0	100	-	%	Ratio of volume of fuel to the total volume of fuel in the second or right-side storage container.		TFT100	Default J1939
1071	Engine Oil Filter Differential Pressure (Extended Range)	8	Unsigned	0	1250	-	kPa	Change in engine oil pressure, measured across the filter, due to the filter and any accumulation of solid or semisolid material on or in the filter.		TFT100	Default J1939

FLEX I/O elements

Property ID in AVL packet	Property Name	Bytes	Type	Value range		Multiplier	Units	Description	HW Support	Parameter Group
Min	Max									
815	Throttle Position	8	Unsigned	0	100	-	%	Throttle position in percentage	TFT100	CAN FLEX
816	Brake Pressed	8	Unsigned	0	1	-	-	Brake Pressed	TFT100	CAN FLEX
817	Charge Plugged	8	Unsigned	0	1	-	-	Charge plugged	TFT100	CAN FLEX
818	Kill Switch Active	8	Unsigned	0	1	-	-	Kill switch status	TFT100	CAN FLEX
819	Kistand Release Status	8	Unsigned	0	1	-	-	Kistand release status	TFT100	CAN FLEX
820	Powerstrain State	8	Unsigned	0	7	-	-	Powerstrain state	TFT100	CAN FLEX
821	Malfunction Indication	8	Unsigned	0	1	-	-	Malfunction indication	TFT100	CAN FLEX
822	Estimated Range	8	Unsigned	0	65535	-	km	Estimated range	TFT100	CAN FLEX
824	SoC Battery	8	Unsigned	0	100	-	%	SoC Battery level in percentage	TFT100	CAN FLEX
828	Remaining Capacity	8	Unsigned	0	65535	-	Ah	Remaining capacity	TFT100	CAN FLEX
829	Full Charge Capacity	8	Unsigned	0	65535	-	Ah	Full Charge Capacity	TFT100	CAN FLEX

831	Drive Mode	8	Unsigned	0	3	-	-	Drive Mode state	TFT100	CAN FLEX
833	Total Distance	8	Unsigned	0	1048575	-	km	Total Distance traveled	TFT100	CAN FLEX
835	Vehicle Speed	8	Unsigned	0	255	-	km/h	Vehicle speed	TFT100	CAN FLEX
836	Ignition Status	8	Unsigned	0	255	-	-	Current ignition status	TFT100	CAN FLEX
844	Top Case Sensor	8	Unsigned	0	1	-	-	Top Case sensor indicator	TFT100	CAN FLEX
1126	Max Available Power	8	Unsigned	0	36000	-	W	Maximum available power	TFT100	CAN FLEX
1127	Handlebar Lock	8	Unsigned	0	1	-	-	Handlebar lock status	TFT100	CAN FLEX
1128	Rear Brake Pressed	8	Unsigned	0	1	-	-	Rear brake status	TFT100	CAN FLEX
1129	COM Error	8	Unsigned	0	1	-	-	COM Error	TFT100	CAN FLEX
1130	RPM	8	Unsigned	0	1	-	rpm	RPM	TFT100	CAN FLEX
1131	Torque Current	8	Unsigned	0	1	-	A	Torque current	TFT100	CAN FLEX
1132	SN High	8	Unsigned	-	-	-	-	SN High	TFT100	CAN FLEX
1133	SN Low	8	Unsigned	-	-	-	-	SN Low	TFT100	CAN FLEX
1134	Lowest Battery Voltage	8	Unsigned	0	65535	-	mV	Lowest battery voltage	TFT100	CAN FLEX
1135	Lowest Battery ID	8	Unsigned	-	-	-	-	Lowest battery ID	TFT100	CAN FLEX
1136	Highest Battery Voltage	8	Unsigned	0	65535	-	mV	Highest battery voltage	TFT100	CAN FLEX
1137	Highest Battery ID	8	Unsigned	-	-	-	-	Highest battery ID	TFT100	CAN FLEX
1138	Highest Mismatch Voltage	8	Unsigned	0	65535	-	mV	Highest mismatch voltage	TFT100	CAN FLEX
1139	Highest Mismatch ID	8	Unsigned	-	-	-	-	Highest mismatch ID	TFT100	CAN FLEX
1140	Lowest Battery Temperature	8	Unsigned	0	65535	-	°C	Lowest battery temperature	TFT100	CAN FLEX
1141	Lowest Temperature Battery ID	8	Unsigned	-	-	-	-	Lowest temperature battery ID	TFT100	CAN FLEX
1142	Highest Battery Temperature	8	Unsigned	0	65535	-	°C	Highest battery temperature	TFT100	CAN FLEX
1143	Highest Temperature Battery ID	8	Unsigned	-	-	-	-	Highest temperature battery ID	TFT100	CAN FLEX
1144	Time To Full Load	8	Unsigned	0	65535	-	s	Time to full load	TFT100	CAN FLEX
1145	Time To Empty	8	Unsigned	0	65535	-	s	Time to empty	TFT100	CAN FLEX
1146	Time To Full	8	Unsigned	0	65535	-	s	Time to full	TFT100	CAN FLEX
1147	Cluster State	8	Unsigned	0	5	-	-	Cluster state	TFT100	CAN FLEX
1148	Cluster SoC	8	Unsigned	0	255	-	%	Cluster SoC	TFT100	CAN FLEX
1149	Max Discharge Current	8	Unsigned	0	255	-	A	Max discharge current	TFT100	CAN FLEX
1150	Recuperation Allowed	8	Unsigned	0	1	-	-	Recuperation status	TFT100	CAN FLEX
1151	Switch Process Needed	8	Unsigned	0	1	-	-	Switch process status	TFT100	CAN FLEX
1152	SoC Switch Level	8	Unsigned	0	255	-	%	SoC switch level	TFT100	CAN FLEX
1153	Part Charge Capacity	8	Unsigned	0	65535	-	Ah	Part charge capacity	TFT100	CAN FLEX
1154	Cluster Voltage	8	Unsigned	0	65535	-	V	Cluster voltage	TFT100	CAN FLEX
1155	Cluster Current	8	Unsigned	0	65535	-	A	Cluster current	TFT100	CAN FLEX
1156	Major Version	8	Unsigned	-	-	-	-	Major version	TFT100	CAN FLEX
1157	Minor Version	8	Unsigned	-	-	-	-	Minor version	TFT100	CAN FLEX
1158	Patch Version	8	Unsigned	-	-	-	-	Patch version	TFT100	CAN FLEX
1159	Recognized Batteries	8	Unsigned	0	255	-	-	Recognized batteries	TFT100	CAN FLEX
1160	Activated Batteries	8	Unsigned	0	255	-	-	Activated batteries	TFT100	CAN FLEX
1161	Faulty Batteries	8	Unsigned	0	255	-	-	Faulty batteries	TFT100	CAN FLEX
1162	Battery 1 Voltage	8	Unsigned	0	65535	-	V	Battery 1 voltage	TFT100	CAN FLEX
1163	Battery 1 Current	8	Unsigned	0	65535	-	A	Battery 1 current	TFT100	CAN FLEX
1164	Battery 1 State	8	Unsigned	0	65535	-	-	Battery 1 State	TFT100	CAN FLEX
1165	Battery 1 SoC	8	Unsigned	0	255	-	%	Battery 1 SoC	TFT100	CAN FLEX
1166	Battery 1 Temperature 1	8	Unsigned	0	127	-	°C	Battery 1 temperature 1	TFT100	CAN FLEX
1167	Battery 1 Temperature 2	8	Unsigned	0	127	-	°C	Battery 1 temperature 2	TFT100	CAN FLEX
1168	Battery 1 Power Stage Temp	8	Unsigned	0	127	-	°C	Battery 1 power stage temp 1	TFT100	CAN FLEX
1169	Battery 1 Remaining Capacity	8	Unsigned	0	65535	-	mAh	Battery 1 remaining capacity	TFT100	CAN FLEX
1170	Battery 2 Voltage	8	Unsigned	0	65535	-	V	Battery 2 voltage	TFT100	CAN FLEX
1171	Battery 2 Current	8	Unsigned	0	65535	-	A	Battery 2 current	TFT100	CAN FLEX
1172	Battery 2 State	8	Unsigned	0	65535	-	-	Battery 2 state	TFT100	CAN FLEX
1173	Battery 2 SoC	8	Unsigned	0	255	-	%	Battery 2 SoC	TFT100	CAN FLEX
1174	Battery 2 Temperature 1	8	Unsigned	0	127	-	°C	Battery 2 temperature 1	TFT100	CAN FLEX
1175	Battery 2 Temperature 2	8	Unsigned	0	127	-	°C	Battery 2 temperature 2	TFT100	CAN FLEX
1176	Battery 2 Power Stage Temp	8	Unsigned	0	127	-	°C	Battery 2 power stage temp	TFT100	CAN FLEX
1177	Battery 2 Remaining Capacity	8	Unsigned	0	65535	-	mAh	Battery 2 remaining capacity	TFT100	CAN FLEX
1178	Battery ID 0 Error Code	8	Unsigned	-	-	-	-	Battery ID 0 error code	TFT100	CAN FLEX
1179	Battery ID 1 Error Code	8	Unsigned	-	-	-	-	Battery ID 1 error code	TFT100	CAN FLEX
1180	Cluster Error Code	8	Unsigned	-	-	-	-	Cluster error code	TFT100	CAN FLEX
1181	Max Charge Current	8	Unsigned	0	65535	-	A	Max charge current	TFT100	CAN FLEX
1182	Lowest Battery 2 Temperature	8	Unsigned	0	65535	-	°C	Lowest battery 2 voltage	TFT100	CAN FLEX
1183	Highest Battery 2 Temperature	8	Unsigned	0	65535	-	°C	Highest battery 2 temperature	TFT100	CAN FLEX
1184	Lowest Battery 2 Voltage	8	Unsigned	0	65535	-	mV	Lowest battery 2 voltage	TFT100	CAN FLEX
1185	Highest Battery 2 Voltage	8	Unsigned	0	65535	-	mV	Highest battery 2 voltage	TFT100	CAN FLEX