



### ECU MASTER, LCA80, LCP80, LCP90, ACP90 - J1939 protocol

PGN (CAN ID [hex])	Message	SPN	Byte	Resolution, Offset	Range	Direction	Period
61444 (0x0CF00400) MASTER/ LCA/ LCP/ ACP	Electronic Engine Controller #1: EEC1 Engine Speed	190	4,5	0.125RPM /bit, 0RPM	0 to 8031.875RPM	TX/RX	10ms
61443 (0x0CF00300) MASTER	Electronic Engine Controller #2: EEC2 Accelerator Pedal Position Percent Load At Current Speed	91 92	2 3	0.4% /bit, 0% 1% /bit, 0%	0 to 100% 0 to 250%	TX	50ms
65262 (0x18FEE00) MASTER	Engine Temperature #1: ET1 Engine Coolant Temperature Engine Fuel Temperature Engine Oil Temperature 1 Engine Intercooler Temperature	110 174 175 52	1 2 3,4 7	1°C /bit, -40°C 1°C /bit, -40°C 0,03125 /bit, -273°C 1°C /bit, -40°C	-40 to 210°C -40 to 210°C -273 to 1735°C -40 to 210°C	TX	1s
65263 (0x18FEF00) MASTER	Engine Fluid Level / Pressure #1: EFP1 Fuel Delivery Pressure Engine Oil Level Engine Oil Pressure Crankcase Pressure Coolant Pressure Coolant Level	94 98 100 101 109 111	1 3 4 5,6 7 8	4kPa /bit, 0kPa 0.4% /bit, 0% 4kPa /bit, 0kPa 1/128kPa /bit, -250kPa 2kPa /bit, 0kPa 0.4% /bit, 0%	0 to 1000kPa 0 to 100% 0 to 1000kPa -250 to 251.99kPa 0 to 500kPa 0 to 100%	TX	500ms
65271 (0x18FEF700) MASTER	Vehicle Electrical Power: VEP Electrical Potential	168	5,6	0.05V /bit, 0V	0 to 3212.75V	TX	1s
65270 (0x18FEF600) MASTER	Inlet / Exhaust Conditions #1: IEC1 Boost Pressure Intake Manifold 1 Temperature Air Inlet Pressure Exhaust Gas Temperature	102 105 106 173	2 3 4 6,7	2kPa /bit, 0kPa 1°C /bit, -40°C 2kPa /bit, 0kPa 0,03125 /bit, -273°C	0 to 500kPa -40 to 210°C 0 to 500kPa -273 to 1735°C	TX	500ms
65266 (0x18FEF200) MASTER	Fuel Economy (Liquid): LFE Throttle Position	51	7	0.4% /bit, 0%	0 to 100%	TX	50ms
65269 (0x18FEF500) MASTER	Ambient Conditions: AMB Barometric Pressure Air Inlet Temperature	108 172	1 6	0.5kPa /bit, 0kPa 1°C /bit, -40°C	0 to 125kPa -40 to 210°C	TX	1s
65272 (0x18FEF800) MASTER	Transmission Fluids: TF Transmission Oil Level Transmission Oil Pressure Transmission Oil Temperature	124 127 177	2 4 5,6	0.4% /bit, 0% 16kPa /bit, 0kPa 0,03125 /bit, -273°C	0 to 100% 0 to 4000kPa -273 to 1735°C	TX	1s
65253 (0x18FEE500) MASTER	Engine Hours, Revolutions: HOURS Total Engine Hours	247	1-4	0.05hr /bit, 0hr	0 to 210,554,060.75 hr	TX	1s
00000 (0x0C000003) MASTER	Torque/Speed Control #1: TSC1 Requested Speed/Speed Limit	898	2,3	0.125RPM /bit, 0RPM	0 to 8031.875RPM	RX	10ms
65350 (0x0CFF4611) MASTER	User Engine Control Engine Start Engine Kill		1.1 5.1	1 -> START 1 -> KILL	0 to 1 0 to 1	RX	10ms
61455 (0x18F00F00) MASTER/ LCA/ LCP	Aftertreatment Outlet Gas #1: AOG1 Aftertreatment Outlet Lambda Aftertreatment Outlet O2 Aftertreatment Sensor Temperature Aftertreatment Actual Step	520193 3227 520194 520195	1,2 3,4 5,6 7,8	0.000390625 /bit, 0 0.00051% /bit, -12% 0.03125°C /bit, -273°C 1 Step /bit, 0	0 to 25.6 -12 to 21% -273 to 1735°C 0 to 65535	RX/TX	50ms
65298 (0x4FF1200) MASTER/ ACP	Desired position: ACP Valve Position Demand	2551	1,2	1/81.92% /bit, 0%	0 to 100%	RX/TX	20ms

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Author: Radek Taraba

<b>Revision:</b>
V8.0-0: First edition
V8.42-0: Added CANopen
V8.45-0: Added ACP90 message



ECU MASTER and LAMBDA controller - CANopen protocol							
PDO (CAN ID [hex])	Message	SPN	Byte	Resolution, Offset	Range	Direction	Period
GUARD (0x700 + ADR) MASTER & LAMBDA	NODE GUARD #1: NG HEART BIT		1..8		0 to 1	TX	50ms
PDO1 (0x180 + ADR) MASTER	Electronic Engine Controller #1: EEC1	190 168 172 106 102	1..2 3 5 6 7	0.125RPM /bit, 0RPM 0.05V /bit, 0V 1°C /bit, -40°C 2kPa /bit, 0kPa 2kPa /bit, 0kPa	0 to 8031.875RPM 0 to 3212.75V -40 to 210°C 0 to 500kPa 0 to 500kPa	TX	25ms
PDO2 (0x280 + ADR) MASTER	Engine Fluid Level / Pressure #1: EFP1	110 111 109 175 98 100	1 3 4 5..6 7 8	1°C /bit, -40°C 0.4% /bit, 0% 2kPa /bit, 0kPa 0,03125 /bit, -273°C 0.4% /bit, 0% 4kPa /bit, 0kPa	-40 to 210°C 0 to 100% 0 to 500kPa -273 to 1735°C 0 to 100% 0 to 1000kPa	TX	50ms
PDO1 (0x180 + ADR) LAMBDA	Aftertreatment Outlet Gas #1: AOG1	520193 3227 520194 520195	1..2 3..4 5..6 7..8	0.000390625 /bit, 0 0.000514% /bit, -12% 0.03125°C /bit, -273°C 1 Step /bit, 0	0 to 25.6 -12 to 21% -273 to 1735°C 0 to 65535	TX	50ms

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