

OBD2/J1939 Parameters

Description	OB D	J193 9	CTM	Paramet er	Min/Max() for J1939 Only	Unit	PID	Response of PID	PGN	Response of PGN
vehicle speed	Yes	Yes	No	p1	0 to 255(0 to 250.996)	km/h	010D	1 byte	FE6 C	byte7~8((1/2 56)Km/bit)
engine RPM(Revolutions Per Minute)	Yes	Yes	No	p2	0 to 16,383(0 to 8,031.875)	min ⁻¹	010C	2 bytes, ((A*256)+B)/4	F00 4	byte4~5(0.12 5rpm/bit)
throttle position	Yes	Yes	No	p3	0 to 100	%	0111	1 byte, A*100/255	FEF2	byte7(0.4%/b it)
VIN(Vehicle Identification Number)	Yes	No	No	p4	17 characters	ASCII	0902	multiple lines	FEE C	n bytes, maximum 200 bytes, '*' is a delimiter
MIL(Malfunction Indicator Lamp) indicator	Yes	Yes	No	p5	0=off, 1=on		0101	4 bytes, bit7 in A	FEC A	bit6~7 of byte1
number of trouble codes	Yes	No	No	p6	0 to 127	decima l	0101	4 bytes, bit0~6 in A		
calculated engine load value	Yes	No	No	p7	0 to 100	%	0104	1 byte, A*100/255		
engine coolant temperature	Yes	Yes	No	p8	-40 to 215(-40 to 210)	°C	0105	1 byte, A-40	FEEE	byte1-40
fuel rail pressure (gauge)	Yes	No	No	p9	0 to 765	kPa	010A	1 byte, A*3		
intake manifold absolute pressure	Yes	No	No	p10	0 to 255	kPa	010B	1 byte		
ignition timing advance for cylinder number 1	Yes	No	No	p11	-64 to 63.5	°	010E	1 byte, A/2-64		
intake air temperature	Yes	Yes	No	p12	-40 to 215(-273 to 1735)	°C	010F	1 byte, A-40	FEF5	byte4~5(0.03 125°C/bit)- 273
MAF(mass flow sensor) air flow rate	Yes	No	No	p13	0 to 655.35	g/s	0110	2 bytes, ((256*A)+B)/100		
run-time since engine start	Yes	No	No	p14	0 to 65,535	second	011F	2 bytes, (A*256)+B		
fuel level input	Yes	No	No	p15	0 to 100	%	012F	1 byte, 100*A/255		
control module voltage	Yes	No	No	p16	0 to 65.535	v	0142	2 bytes, ((A*256)+B)/100 0		
absolute load value	Yes	No	No	p17	0 to 25700	%	0143	2 bytes, ((A*256)+B)*10 0/255		
power take off status	Yes	No	No	p18	0=off, 1=on		011E	1 byte, bit0 in A		
distance travelled while MIL is activated	Yes	No	No	p19	0 to 65,535	km	0121	2 bytes, (A*256)+B		
distance since diagnostic trouble codes cleared	Yes	No	No	p20	0 to 65,535	km	0131	2 Bytes, (A*256)+B		
minutes run on the engine while MIL activated	Yes	No	No	p21	0 to 65,535	min	014D	2 Bytes, (A*256)+B		
time since diagnostic trouble codes cleared	Yes	No	No	p22	0 to 65,535	min	014E	2 Bytes, (A*256)+B		

odometer	No	Yes	No	p23	0 to 526385151.9	km		proprietary	FEE0	byte5~8(0.125Km/bit)
high resolution odometer	No	Yes	No	p24	0 to 21055406	km			FEC 1	byte1~4(5m/bit)
total engine hours	Yes	Yes	No	p25	0 to 210554060.75	hour		proprietary	FEE5	byte1~4(0.05 hr/bit)
XBee device ID of Gateway	Yes	Yes	No	id	16 digits	hex				
calculated peak acceleration	Yes	Yes	No	pa	0 to 512	(km/h)/sec				
calculated peak deceleration(braking)	Yes	Yes	No	pb	0 to 512	(km/h)/sec				
percent load at current RPM	No	Yes	No	p26	0 to 125	%			F003	byte3(1%/bit)
actual engine - % torque	No	Yes	No	p27	-125 to 125	%			F004	byte3(1%/bit)
fuel temperature	No	Yes	No	p28	-40 to 210	°C			FEFE	byte2(1°C/bit)
boost pressure	No	Yes	No	p29	0 to 500	kPa			FEF6	byte2(2kPa/bit)
intake manifold 1 temperature	No	Yes	No	p30	0 to 500	kPa			FEF6	byte3(1°C/bit)
total fuel used	No	Yes	No	p31	0 to 2,105,540.607.5	L			FEE9	bytes5~8(0.5L/bit)
fuel deliver pressure	No	Yes	No	p32	0 to 1,000	kPa			FEFF	byte1(4kPa/bit)
engine oil pressure	No	Yes	No	p33	0 to 1,000	kPa			FEFF	byte4(4kPa/bit)
fuel rate	No	Yes	No	p34	0 to 3,212.75	L/h			FEF2	bytes1~2(0.05L/bit)
battery pot. voltage (switched)	No	Yes	No	p35	0 to 3,212.75	V			FEF7	bytes7~8(0.05V/bit)
accelerator pedal position	No	Yes	No	p36	0 to 100	%			F003	byte2(0.4%/bit)
Analog Input 1	No	No	Yes	ctm_ain1	0.00 to 10.23	V				
Analog input 2	No	No	Yes	ctm_ain2	0.00 to 10.23	V				
Analog input 3	No	No	Yes	ctm_ain3	0.00 to 10.23	V				
Analog input 4	No	No	Yes	ctm_ain4	0.00 to 10.23	V				
Analog input 5	No	No	Yes	ctm_ain5	0.00 to 10.23	V				
Analog input 6	No	No	Yes	ctm_ain6	0.00 to 10.23	V				
Digital inputs(6 bits)	No	No	Yes	ctm_din	0 to 63	On/Off				
Ignition state	No	No	Yes	ctm_ign	0 to 1	On/Off				
Modem's supply voltage	No	No	Yes	ctm_vcc	0.00 to 25.50	V				
Driver's ID - WPAN	No	No	Yes	wpan_driverid	16 digits in hex	ASCII				
Driver's ID - RFID	No	No	Yes	rfid_driverid	9 characters	ASCII				
GPS Odometer	No	No	Yes	ctm_gps_odo	0.00 to 999999.99	km				

- PID = for OBD2. A=1st byte of response, B=2nd byte of response, C=3rd byte of response, D=4th byte of response.
- PGN = for J1939. The response is always 4 bytes header and 8 bytes payload. Byte1 means 1st byte of payload.
- CTM = CTM-15X Modem