

Name	ShortName	ModeAndPID	Equation	Min Value	Max Value	Units	Header
ICE Actual RPM	ICE Rev	010C	$(64 * A) + (0.25 * B)$	0	5000	rpm	7E0
ICE Actual Torque (lbs)	ICE Torque	21CD	$(A - 128) * 0.7376$	0	82	lb-ft	7E0
MG2 Power	MG2 Power	21C3	$(256 * A + B - 16383) * ((32 * C + 0.125 * D - 500) * 0.7376) / 5252$	-67	67	hp	7E2
MG1 Power	MG1 Power	21C3	$(256 * G + H - 16383) * ((32 * I + 0.125 * J - 500) * 0.7376) / 5252$	-34	34	hp	7E2
ICE Power Request (hp)	ICE Power	21C3	$((256 * K) + L) * 0.0134$	0	76	hp	7E2
HV Battery Power (hp)	NiMH Power	21C3	$((2 * AC) * (2 * AE - 256)) * 0.001341$	-36	36	hp	7E2
Combined Power (hp)	HSD Power	21C3	$((256 * A + B - 16383) * ((32 * C + 0.125 * D - 500) * 0.7376) / 5252) + ((256 * G + H - 16383) * ((32 * I + 0.125 * J - 500) * 0.7376) / 5252)$	0	110	hp	7E2
MG2 Revolution	MG2 Rev	21C3	$((256 * A) + B) - 16383$	-2000	7000	RPM	7E2
MG2 Torque (lbs-ft)	MG2 Torque	21C3	$((32 * C) + (0.125 * D) - 500) * 0.7376$	-300	300	lb-ft	7E2
MG1 Revolution	MG1 Rev	21C3	$((256 * G) + H) - 16383$	-13000	13000	RPM	7E2
MG1 Torque (lbs-ft)	MG1 Torque	21C3	$((32 * I) + (0.125 * J) - 500) * 0.7376$	-200	200	lb-ft	7E2
Target Engine Speed	Targ ICE Spd	21C3	$(256 * M) + N$	0	8000	RPM	7E2
Engine Speed	ICE Spd	21C3	$(256 * O) + P$	0	8000	RPM	7E2
Brake - Master Cylinder Torque (lbs-ft)	Mast Cyl Torq	21C3	$(4 * R - 512) * 0.7376$	-378	375	lb-ft	7E2
Brake - Regenerative Torque (lbs-ft)	Regen Brake	21C3	$(4 * E) * 0.7376$	0	137	lb-ft	7E2
Brake - Friction Pad Torque (lbs-ft)	Brake Pad	21C3	$((4 * R - 512) + (4 * E)) * 0.7376$	-200	0	lb-ft	7E2
Friction Brake Power (kW)	F-Brake Power	21C3	$((((256 * A) + B) - 16383) * ((4 * R - 512) + (4 * E))) / 9549$	0	200	kW	7E2
Friction Brake Power (hp)	F-Brake Power	21C3	$((((256 * A) + B) - 16383) * ((4 * R - 512) + (4 * E))) / 7120$	0	200	hp	7E2
State Of Charge	HV SOC	21C3	$0.392 * S$	40	80	%	7E2
WOUT HV Batt to Converter	HV Pwr Out	21C3	$320 * T$	0	21	kW	7E2
WIN HV Batt to Converter	HV Pwr In	21C3	$U - 40800$	-25	0	kW	7E2
Discharge Request to Adjust SOC	HV Out Req	21C3	$V - 20480$	-20480	20320	Watt	7E2
Drive Condition ID	Drive Condition	21C3	X	0	6	Num	7E2
MG1 Inverter Temperature	MG1 Inv Temp	21C3	$1.8 * Y - 58$	-58	401	F	7E2
MG2 Inverter Temperature	MG2 Inv Temp	21C3	$1.8 * Z - 58$	-58	401	F	7E2
Motor Temperature No2	MG1 Temp	21C3	$1.8 * AA - 58$	-58	401	F	7E2
Motor Temperature No1	MG2 Temp	21C3	$1.8 * AB - 58$	-58	401	F	7E2
Power Resource VB	HV VB	21C3	$2 * AC$	150	300	Volt	7E2
Power Resource IB	HV IB	21C3	$2 * AE - 256$	-100	100	Amp	7E2
Accelerator Pedal Angle	Accel Deg	21C4	$0.392 * C$	0	100	%	7E2
VL-Voltage Before Boosted	HV Before Boost	21C4	$2 * D$	0	510	Volt	7E2
VH-Voltage After Boosted	HV After Boost	21C4	$2 * E$	0	765	Volt	7E2
Converter Temperature	Conv Temp	21C4	$1.8 * F - 58$	-58	401	F	7E2
Crank Position	Crank Position	21C4	$0.706 * G$	0	100	Degree	7E2
System Main Relay 1 Status	Relay1 Status	21C4	$\{H:0\}$	0	1	Bin	7E2
System Main Relay 2 Status	Relay2 Status	21C4	$\{H:1\}$	0	1	Bin	7E2
System Main Relay 3 Status	Relay3 Status	21C4	$\{H:2\}$	0	1	Bin	7E2
Converter Carrier Frequency	Conv Carrier	21C4	$\{I:0\}$	0	1	Bin	7E2
Smart Key Status	SKS	21C4	$\{I:2\}$	0	1	Bin	7E2
Aircon Gate Status	AC Gate	21C4	$\{I:4\}$	0	1	Bin	7E2
Converter Gate Status	Conv Gate	21C4	$\{I:5\}$	0	1	Bin	7E2
MG2 Gate Status	MG2 Gate	21C4	$\{I:6\}$	0	1	Bin	7E2
MG1 Gate Status	MG1 Gate	21C4	$\{I:7\}$	0	1	Bin	7E2
Motor (MG2) Torque Execute Value	MG2 Torq Exc	21C4	$4 * J - 512$	-512	508	Nm	7E2
Motor (MG1) Torque Execute Value	MG1 Torq Exc	21C4	$4 * K - 512$	-512	508	Nm	7E2
Short Circuit Wave Highest Value	SCW High	21C4	$0.019608 * L$	0	5	Volt	7E2
Raising Pressure Ratio	Pressure Ratio	21C4	$0.392 * O$	0	100	%	7E2

Aircon Consumption Power	AC Power	21C4	$0.019608 * P$	0	5	kW	7E2
HV Battery State of Charge	HV SOC	21CE	$0.5 * A$	40	80	%	7E3
HV Battery Current	HV Current	21CE	$(2.56 * B) + (0.01 * C) - 327.68$	-100	100	Amp	7E3
HV Battery Air Intake Temp	HV Batt Air	21CF	$(256 * 9 / 500) * A + (9 / 500) * B - 557.824$	-558	622	F	7E3
Battery power (kW)	HV Power	21CE	$0.001 * ((2.56 * B) + (0.01 * C) - 327.68) * ((2.56 * (D + F + H + J + L + N + P +$	-27	27	kW	7E3
Battery Power (hp)	HV Power	21CE	$((2.56 * B) + (0.01 * C) - 327.68) * ((2.56 * (D + F + H + J + L + N + P + R + T +$	-36	36	hp	7E3
HV Battery Block-01 Voltage	HV Block1	21CE	$(2.56 * D) + (0.01 * E) - 327.68$	0	18	Volt	7E3
HV Battery Block-02 Voltage	HV Block2	21CE	$(2.56 * F) + (0.01 * G) - 327.68$	0	18	Volt	7E3
HV Battery Block-03 Voltage	HV Block3	21CE	$(2.56 * H) + (0.01 * I) - 327.68$	0	18	Volt	7E3
HV Battery Block-04 Voltage	HV Block4	21CE	$(2.56 * J) + (0.01 * K) - 327.68$	0	18	Volt	7E3
HV Battery Block-05 Voltage	HV Block5	21CE	$(2.56 * L) + (0.01 * M) - 327.68$	0	18	Volt	7E3
HV Battery Block-06 Voltage	HV Block6	21CE	$(2.56 * N) + (0.01 * O) - 327.68$	0	18	Volt	7E3
HV Battery Block-07 Voltage	HV Block7	21CE	$(2.56 * P) + (0.01 * Q) - 327.68$	0	18	Volt	7E3
HV Battery Block-08 Voltage	HV Block8	21CE	$(2.56 * R) + (0.01 * S) - 327.68$	0	18	Volt	7E3
HV Battery Block-09 Voltage	HV Block9	21CE	$(2.56 * T) + (0.01 * U) - 327.68$	0	18	Volt	7E3
HV Battery Block-10 Voltage	HV Block10	21CE	$(2.56 * V) + (0.01 * W) - 327.68$	0	18	Volt	7E3
HV Battery Block-11 Voltage	HV Block11	21CE	$(2.56 * X) + (0.01 * Y) - 327.68$	0	18	Volt	7E3
HV Battery Block-12 Voltage	HV Block12	21CE	$(2.56 * Z) + (0.01 * AA) - 327.68$	0	18	Volt	7E3
HV Battery Block-13 Voltage	HV Block13	21CE	$(2.56 * AB) + (0.01 * AC) - 327.68$	0	18	Volt	7E3
HV Battery Block-14 Voltage	HV Block14	21CE	$(2.56 * AD) + (0.01 * AE) - 327.68$	0	18	Volt	7E3
Internal Resistance R01	IR1	21D0	$0.001 * P$	0	10	Ohm	7E3
Internal Resistance R02	IR2	21D0	$0.001 * Q$	0	10	Ohm	7E3
Internal Resistance R03	IR3	21D0	$0.001 * R$	0	10	Ohm	7E3
Internal Resistance R04	IR4	21D0	$0.001 * S$	0	10	Ohm	7E3
Internal Resistance R05	IR5	21D0	$0.001 * T$	0	10	Ohm	7E3
Internal Resistance R08	IR6	21D0	$0.001 * U$	0	10	Ohm	7E3
Internal Resistance R07	IR7	21D0	$0.001 * V$	0	10	Ohm	7E3
Internal Resistance R08	IR8	21D0	$0.001 * W$	0	10	Ohm	7E3
Internal Resistance R09	IR9	21D0	$0.001 * X$	0	10	Ohm	7E3
Internal Resistance R10	IR10	21D0	$0.001 * Y$	0	10	Ohm	7E3
Internal Resistance R11	IR11	21D0	$0.001 * Z$	0	10	Ohm	7E3
Internal Resistance R12	IR12	21D0	$0.001 * AA$	0	10	Ohm	7E3
Internal Resistance R13	IR13	21D0	$0.001 * AB$	0	10	Ohm	7E3
Internal Resistance R14	IR14	21D0	$0.001 * AC$	0	10	Ohm	7E3
VMF Fan Motor Voltage	HV Fan V	21CF	$(0.2 * C) - 25.6$	9	12	Volt	7E3
Auxiliary Battery Voltage	Aux Batt V	21CF	$(0.2 * D) - 25.6$	0	15	Volt	7E3
HV Battery Charge	HV Charge	21CF	$E - 64$	0	50	kW	7E3
HV Battery Discharge	HV Discharge	21CF	$F - 64$	0	50	kW	7E3
Delta SOC	Delta SOC	21CF	$0.01 * G$	0	60	%	7E3
HV Battery Fan Speed	HV Fan Spd	21CF	I	0	6	Num	7E3
HV Battery Temp 1	HV Batt T1	21CF	$(256 * 9 / 500) * K + (9 / 500) * L - 557.824$	-558	622	F	7E3
HV Battery Temp 2	HV Batt T2	21CF	$(256 * 9 / 500) * M + (9 / 500) * N - 557.824$	-558	622	F	7E3
HV Battery Temp 3	HV Batt T3	21CF	$(256 * 9 / 500) * O + (9 / 500) * P - 557.824$	-558	622	F	7E3
HV Battery Block Count	HV Blocks	21D0	A	0	14	Num	7E3
Accumulated Time of Battery LOW	HV Batt Low	21D0	$(256 * B) + C$	0	5000	Sec	7E3
Accumulated Time of DC Inhibit	DC Inhibit	21D0	$(256 * D) + E$	0	5000	Sec	7E3
Accumulated Time of Battery Too High	HV Batt High	21D0	$(256 * F) + G$	0	5000	Sec	7E3
Accumulated Time of Hot Temperature	HV Batt Temp High	21D0	$(256 * H) + I$	0	5000	Sec	7E3

HV Battery Block Lowest Volt	HVB Min V	21D0	$(2.56 * J) + (0.01 * K) - 327.68$	0	15	Volt	7E3
HV Battery Block # with Min V	HVB Min #	21D0	L	0	13	Num	7E3
HV Battery Block Highest Volt	HVB Max V	21D0	$(2.56 * M) + (0.01 * N) - 327.68$	0	23	Volt	7E3
HV Battery Block # with Max V	HVB Max #	21D0	O	0	13	Num	7E3
Regenerative Brake Torque	Regen Torq	21C3	$4 * E$	0	186	Nm	7E2
Request Regenerative Brake Torque	Req Regen Torq	21C3	$4 * F$	0	186	Nm	7E2
Power Request	Power Rqst	21C3	$(256 * K) + L$	0	320000	Watt	7E2
MG2 Torque	MG2 Torq	21C3	$(32 * C) + (0.125 * D) - 500$	-400	400	Nm	7E2
MG1 Torque	MG1 Torq	21C3	$(32 * I) + (0.125 * J) - 500$	-200	200	Nm	7E2
Shift Sensor Main	Shift Main	21C3	$0.019608 * AF$	0	5	Volt	7E2
Shift Sensor Sub	Shift Sub	21C3	$0.019608 * AG$	0	5	Volt	7E2
Shift Sensor Select Main	Shift Sel Main	21C3	$0.019608 * AH$	0	5	Volt	7E2
Shift Sensor Select Sub	Shift Sel Sub	21C3	$0.019608 * AI$	0	5	Volt	7E2
Shift Sensor Shift Position	Shift Position	21C3	$0.019608 * AJ$	0	5	Num	7E2
Driving Pattern 1	Drive Pattern1	21C4	{A:0}	0	1	Bin	7E2
Driving Pattern 2	Drive Pattern2	21C4	{A:1}	0	1	Bin	7E2
Driving Pattern 3	Drive Pattern3	21C4	{A:2}	0	1	Bin	7E2
Loading Condition	Load Cond	21C4	{A:7}	0	1	Bin	7E2
Engine Warming Up Request	ICE Warm Req	21C4	{B:0}	0	1	Bin	7E2
Aircon Request	Aircon Req	21C4	{B:1}	0	1	Bin	7E2
Engine Stop Inhibit Request	ICE Inhibit Req	21C4	{B:2}	0	1	Bin	7E2
HVAC OBD Request	HVAC Req	21C4	{B:3}	0	1	Bin	7E2
Main Battery Charging Request	HV Charge Req	21C4	{B:4}	0	1	Bin	7E2
Engine Idling Request	ICE Idle Req	21C4	{B:5}	0	1	Bin	7E2
Engine Stop Request	ICE Stop Req	21C4	{B:6}	0	1	Bin	7E2
Check Mode	Chk Mode	21C4	{B:7}	0	1	Bin	7E2
Master Cylinder Torque	Mast Cyl Torq	21C3	$(4 * R) - 512$	-512	508	Nm	7E2
Cruise Control Memory Vehicle SPD	CC Set	21D3	A	0	150	km/h	7E2
Cruise Throttle Opening Angle	CC Throt Angle	21D3	$0.3922 * B$	0	100	%	7E2
Cruise Control Main Switch -- (Main CPU)	CC Switch	21D3	{C:0}	0	1	Bin	7E2
Cruise Control Main Switch -- Ready (Main CPU)	CC Ready	21D3	{C:2}	0	1	Bin	7E2
Cruise Control Main Switch -- Indicator (Main CPU)	CC Indicator	21D3	{C:5}	0	1	Bin	7E2
Cruise Control	CC	21D3	{C:6}	0	1	Bin	7E2
Shift D Position	Shifter D	21D3	{C:7}	0	1	Bin	7E2
Stop Light Switch 1 (Sub CPU)	Stop Light1	21D3	{D:0}	0	1	Bin	7E2
Stop Light Switch 2 (Sub CPU)	Stop Light2	21D3	{D:1}	0	1	Bin	7E2
Stop Light Switch 1 (Main CPU)	Stop Light3	21D3	{D:2}	0	1	Bin	7E2
RES / ACC Switch	CC RES/ACC	21D3	{D:3}	0	1	Bin	7E2
SET / COAST Switch	CC Set/Coast	21D3	{D:4}	0	1	Bin	7E2
Cancel Switch	CC Cancel	21D3	{D:5}	0	1	Bin	7E2