9. Subaru Select Monitor

A: OPERATION

1. HOW TO USE SUBARU SELECT MONITOR

NOTE:
For detailed operation procedures, refer to “PC application help for Subaru Select Monitor”.

2. DISPLAY CURRENT ENGINE DATA

NOTE:
- For detailed operation procedures, refer to “PC application help for Subaru Select Monitor”.
- A list of the support data is shown in the following table.
- *: For models without cruise control, the brake switch signal does not change.

Contents	Item	Note (at idling)	Unit
Engine speed	Engine Speed	729 rpm	rpm
Amount of intake air	Mass Air Flow	2.4 g/s	g/s or lb/m
Vehicle speed	Vehicle speed	0 km/h	km/h or MPH
Throttle valve angle	Throttle Opening Angle	12%	%
Acceleration opening angle	Accel opening angle	0.0%	%
A/F sensor output lambda 1	A/F Sensor #1	1.01	—
#1 Cylinder ignition timing	Ignition timing adv. #1	6.0°	°
Engine coolant temperature	Coolant Temp.	92°C	°C or °F
Injection 1 pulse width	Fuel Injection #1 Pulse	0.51 ms	ms
Short term fuel trim by front oxygen (A/F) sensor (bank 1)	Short term fuel trim B1	0.8%	%
Long term fuel trim by front oxygen (A/F) sensor (bank 1)	Long term fuel trim B1	3.1%	%
Learned value of ignition timing	Learned Ignition Timing	0.0 deg	deg
Intake manifold absolute pressure	Mani. Absolute Pressure	26 kPa	kPa, mmHg, inHg or psig
Oxygen sensor (bank 1 sensor 2)	Oxygen sensor #12	0.895 V	V
AVCS advance angle amount RH	VVT Adv. Ang. Amount R	0 deg	deg
AVCS target advance angle amount RH	VVT Advance Target Angle Amount R	0 deg	deg
AVCS advance angle amount LH	VVT Adv. Ang. Amount L	0 deg	deg
AVCS target advance angle amount LH	VVT Advance Target Angle Amount L	0 deg	deg
Exhaust AVCS retard angle amount RH	Exh. VVT Retard Ang. R	0 deg	deg
Exhaust AVCS target retard angle amount RH	Ex VVT Retard Target Angle R	0 deg	deg
Exhaust AVCS retard angle amount LH	Exh. VVT Retard Ang. L	0 deg	deg
Exhaust AVCS target retard angle amount LH	Ex VVT Retard Target Angle L	0 deg	deg
Intake AVCS initial position learning value (bank 1)	VVT Initial Position Learning Value #1	78.9°CA	°CA
Intake AVCS initial position learning value (bank 2)	VVT Initial Position Learning Value #2	82.4°CA	°CA
Exhaust AVCS initial position learning value (bank 1)	VVT Ex Initial Position Learning Value #1	110.3°CA	°CA
Exhaust AVCS initial position learning value (bank 2)	VVT Ex Initial Position Learning Value #2	108.9°CA	°CA
ECM power supply voltage	ECU ACC	13.924 V	V
Target engine speed	Target engine speed	700 rpm	rpm
A/F target lambda	Target Equivalence Ratio	0.999	—
Engine oil temperature	Oil Temperature	96°C	°C or °F
Intake air temperature (mass air flow sensor)	IAT Sensor #11	50°C	°C or °F
Intake air temperature (intake manifold)	IAT Sensor #12	70°C	°C or °F

Contents	Item	Note (at idling)	Unit
Estimated value of ambient temperature	Ambient Temperature	—	°C or °F
Engine load data	Calculated load value	21.2%	%
Absolute load	Absolute Load Value	17.3%	%
Atmospheric pressure	Atmosphere Pressure	99 kPa	kPa, mmHg, inHg or psig
Intake manifold relative pressure	Mani. Relative Pressure	(Air intake absolute pressure – Atmospheric pressure)	kPa, mmHg, inHg or psig
Boost control valve duty ratio	Primary Control	0.0%	%
Target throttle opening angle	Target Throttle Opening Angle	2 deg	deg
Actual throttle opening angle	Actual Throttle Opening Angle	2 deg	deg
Target throttle opening angle	Target Throttle Opening Angle	3.1%	%
Relative throttle opening angle	Relative Throttle Pos.	2.0%	%
Electronic throttle control motor voltage	Throttle Motor Voltage	13.8 V	V
Main throttle position sensor voltage	Main-Throttle Sensor	0.62 V	V
Sub throttle position sensor voltage	Sub-Throttle Sensor	0.60 V	V
Throttle motor duty	Throttle Motor Duty	–33%	%
Main accelerator pedal position sensor voltage	Main-Accelerator Sensor	0.68 V	V
Sub accelerator pedal position sensor voltage	Sub-Accelerator Sensor	0.68 V	V
ISC air volume correction	Idle Mass Air Flow	3.00 g/s	g/s
ISC feedback air volume correction	Idle Mass Air Flow Feedback correct	0.00 g/s	g/s
ISC air flow amount learning value	ISC Learning Value	0.55 g/s	g/s
ISC air conditioner load correction	Idle A/C load correct	0.86 g/s	g/s
ISC electric load correction	Electric Load Feedback Val	0.10 g/s	g/s
ISC throttle dirt correction	Idle dirty throttle correct	0 g/s	g/s
Mass air flow sensor voltage	Air Flow Sensor Voltage	0.8 V	V
Actual fuel pressure	Fuel Rail Pressure A	3,000 kPa	kPa
Target fuel pressure	Commanded Fuel Rail Pressure A	3,000 kPa	kPa
Remaining fuel level	Fuel Level	—	%
Fuel level sensor resistance	Fuel level resistance	—	Ω
Fuel pump duty ratio	Fuel Pump Duty	65%	%
Evaporative purge	Evap Purge	0.0%	%
Purge control solenoid duty ratio	CPC Valve Duty Ratio	0%	%
Purge gas density learning value	Purge Density Learn Value	0.0%	%
Purge gas injection rate to the amount of intake air	Evap Purge Flow	0.0%	%
Alternator duty ratio	ALT Duty	69%	%
Alternator control mode	Alternator control mode	High/Mid/Low	—
Battery terminal voltage	Battery Terminal Voltage	14.0 V	V
Battery charge/discharge current	Battery Charge/Discharge Current	3.6 A	A
Estimated value of battery temperature	Estimated Battery Temperature	45°C	°C
Remaining amount of battery	Remaining Battery Capacity	89.0%	%
Retard angle correction for knocking	Knocking Correction	0.0 deg	deg
Air fuel ratio control system for bank 1	Fuel system for Bank 1	Cl_normal	—
A/F sensor current value 1	A/F Sensor #1 Current	0.00 mA	mA
A/F sensor resistance value 1	A/F Sensor #1 Resistance	79 Ω	Ω
A/F correction #3	A/F Correction #3	–1.41%	%
Front oxygen (A/F) sensor heater current value 1 (bank 1 sensor 1)	Front O2 Heater #1	0.00 A	A

Contents	Item	Note (at idling)	Unit
Rear oxygen sensor heater current value (bank 1 sensor 2)	Rear O2 Heater Current	0.00 A	A
Number of EGR steps	No. of EGR steps	0 STEP	STEP
Target EGR	Commanded EGR	0.0%	%
EGR deviation	EGR Error	0.0%	%
Tumble generator valve RH opening angle	TGV Position Sensor R	3.12 V	V
Tumble generator valve LH opening angle	TGV Position Sensor L	0.82 V	V
Tumble generator valve output	TGV Output	OFF	—
Tumble generator valve driving	TGV Drive	Close	—
Oil flow control solenoid valve duty ratio RH	OCV Duty R	58.8%	%
Oil flow control solenoid valve duty ratio LH	OCV Duty L	58.4%	%
Oil flow control solenoid valve current RH	OCV Current R	704 mA	mA
Oil flow control solenoid valve current LH	OCV Current L	736 mA	mA
Exhaust oil flow control solenoid valve duty ratio RH	Exh. OCV Duty R	45.9%	%
Exhaust oil flow control solenoid valve duty ratio LH	Exh. OCV Duty L	45.9%	%
Exhaust oil flow control solenoid valve current value RH	Exh. OCV Current R	544 mA	mA
Exhaust oil flow control solenoid valve current value LH	Exh. OCV Current L	544 mA	mA
#1 cylinder roughness monitor	Roughness Monitor #1	0	—
#2 cylinder roughness monitor	Roughness Monitor #2	0	—
#3 cylinder roughness monitor	Roughness Monitor #3	0	—
#4 cylinder roughness monitor	Roughness Monitor #4	0	—
#1 cylinder monitor	Cylinder Monitor #1	—	rpm
#2 cylinder monitor	Cylinder Monitor #2	—	rpm
#3 cylinder monitor	Cylinder Monitor #3	—	rpm
#4 cylinder monitor	Cylinder Monitor #4	—	rpm
Total number of ignition switch ON	Trip Count	—	times
Count	Count	Common	—
Elapsed time after ignition switch ON	Time Count	—	ms
Elapsed time after engine start	Time Since Engine Start	—	sec
Elapsed time after starting engine	Elapsed Time After Engine Run	—	sec
Accumulation of the elapsed time after starting engine	Accumulation Time After Engine Run	—	sec
Engine oil temperature at engine start	Initial Engine Oil Temp.	—	°C
Engine coolant temperature at engine start	Initial Engine Coolant Temp.	—	°C
Intake air temperature at engine start	Initial Intake Air Temp.	—	°C
Cranking time	Engine Starting Time	—	ms
Engine control module power OFF time	IG OFF Elapsed Time	—	sec
Travel distance after DTC clear	Meter since DTC cleared	—	km/mile
Engine operating time while malfunction indicator light lit	Time while MIL lighted	0 min	min
Elapsed time after DTC clear	Time since DTC cleared	—	min
Number of warm ups after DTC clear	Number of warm-ups	—	times
Travel distance after the malfunction indicator light illuminates	Lighted MI lamp history	—	km/mile
Odometer	Odometer	—	km
Elapsed time after detecting the high rotation speed	Fuel Cut Elps Time	0 sec	sec
Memory vehicle speed	Memorized Cruise Speed	0 km/h	km/h or MPH
Catalyst temperature #1	Catalyst Temperature #11	259.5°C	°C or °F
Type of fuel	Type of fuel	GAS	—
Neutral condition (CVT model)	AT drive status	NEUT	—
Neutral condition (MT model)	MT gear status	NEUT	—

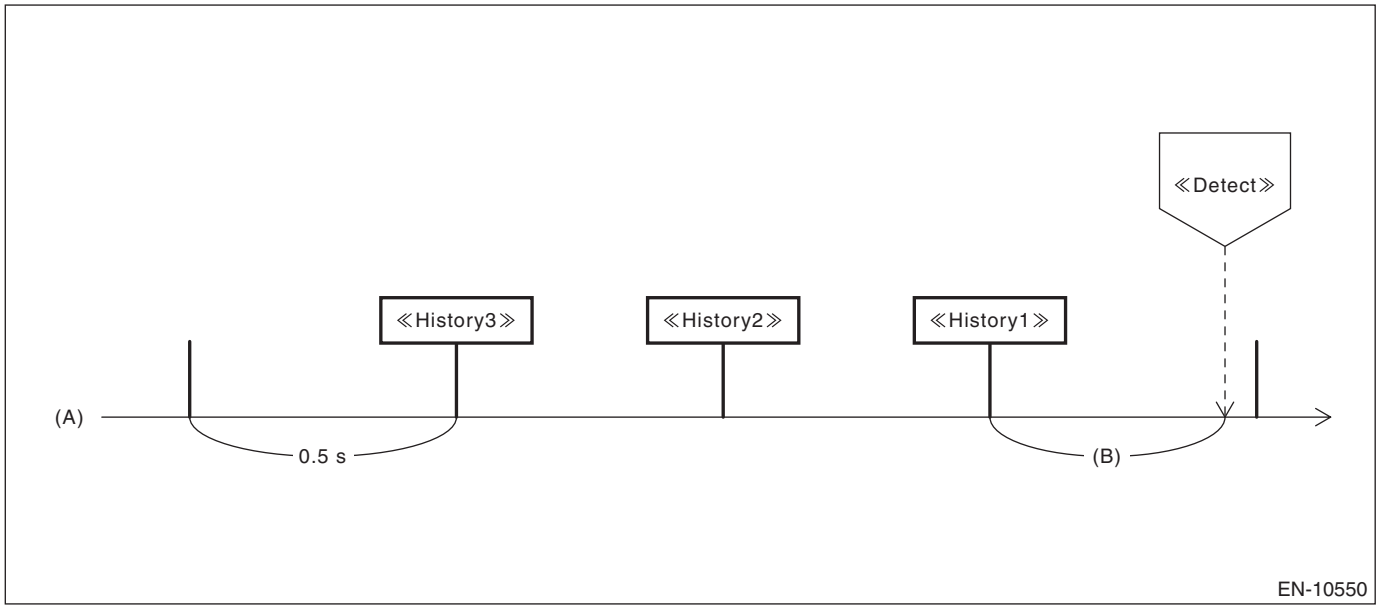
Contents	Item	Note (at idling)	Unit
Evaporative emission control system pressure	Absolute Evap System Vapor Pressure	99 kPa	kPa, mmHg, inHg or psig
X mode	X Mode	OFF	—
SI-DRIVE mode	SI Drive mode(Display)	I, S or S#	—
Neutral position switch	Neutral switch	Neutral	—
ETC motor relay	ETC Motor Relay	ON	—
Clutch switch (MT model)	Clutch switch	OFF	—
Stop light switch	Stop light SW	OFF (when OFF)	—
Brake switch*	Brake SW	OFF (when OFF)	—
Idle switch	Idle Switch Signal	Idle	—
Ignition switch	Ignition switch	ON	—
Pressure switch	A/C Mid Pressure Switch	OFF (when OFF)	—
Air conditioner compressor relay output	A/C Compressor Signal	OFF (when OFF)	—
Radiator fan relay 1	Radiator Fan Relay #1	OFF (when OFF)	—
Radiator fan relay 2	Radiator Fan Relay #2	OFF (when OFF)	—
Air conditioner switch	A/C Switch	OFF (when OFF)	—
Starter switch	Starter SW	OFF	—
Rear defogger switch	Rear Defogger SW	OFF (when OFF)	—
Blower fan switch	Blower Fan SW	OFF (when OFF)	—
Light switch	Light Switch	OFF (when OFF)	—
Wiper switch	Wiper Switch	OFF (when OFF)	—
Delivery mode terminal	Delivery Mode Connector	OFF	—
Rear oxygen sensor monitor	Rear O2 Rich Signal	Rich	—
Knocking signal	Knocking Signal	OFF	—
Crankshaft position sensor signal	Crankshaft Position Sig.	ON	—
Camshaft position sensor signal	Camshaft Position Sig.	ON	—
Purge control solenoid valve 2	CPC Solenoid 2	OFF	—
Vehicle dynamics control (VDC) torque down prohibition output	Ban of Torque Down	ON	—
Vehicle dynamics control (VDC) torque down demand	Request Torque Down VDC	OFF	—
AT coordinate permission signal (CVT model)	Torque Permission Signal	OFF	—
SET/COAST switch	SET/COAST Switch	OFF (when OFF)	—
RESUME/ACCEL switch	RESUME/ACCEL Switch	OFF (when OFF)	—
Cruise control main switch	Main switch	OFF (when OFF)	—
Distance change switch (model with EyeSight)	distance change SW	OFF (when OFF)	—
Cruise control cancel switch	CC Cancel SW	OFF (when OFF)	—
All cylinders fuel cut	All Cylinders Fuel cut	OFF	—
Immobilizer fuel cut condition	Immobilizer Fuel Cut Status	OFF	—
Request for shift pattern during low water temperature	Shift Pattern Demand for Low Water Temperature	OFF	—
Oil level switch signal	Oil level switch	HIGH level	—
ELCM switching valve drive signal	ELCM switching valve	Open	—
ELCM vacuum pump drive signal	ELCM pump	OFF	—
AT turbine rotation speed (CVT model)	AT turbine speed	900	—
Lock-up condition (CVT model)	Lock up status	OPEN	—
P range / N range signal (CVT model)	P/N Signal	—	—
Engine ignition control information 1	Ignition Control Check 1	90	—
Engine ignition control information 2	Ignition Control Check 2	75	—
Charge control detailed information 1	Alternator control check 1	91	—
Charge control detailed information 2	Alternator control check 2	90.1	—

Contents	Item	Note (at idling)	Unit
Charge control detailed information 3	Alternator control check 3	10.350	—
Charge control detailed information 4	Alternator control check 4	8.970	—
Charge control detailed information 5	Alternator control check 5	100	—
Charge control detailed information 6	Alternator control check 6	0	—
Charge control detailed information 7	Alternator control check 7	14.2	—
Charge control detailed information 8	Alternator control check 8	64	—
Charge control detailed information 9	Alternator control check 9	0	—
Charge control detailed information 10	Alternator control check 10	2	—
Condition of malfunction indicator light	MI(MIL)	OFF	—
Number of diagnosis code	Number of Diag. Code:	0	—
Front oxygen (A/F) sensor (bank 1 sensor 1)	(Oxygen sensor #11)	Support	—
Rear oxygen sensor (bank 1 sensor 2)	(Oxygen sensor #12)	Support	—
A/F correction (bank 1 sensor 2)	Short term fuel trim #12	0.0%	%
A/F lambda (bank 1 sensor 1)	A/F Sensor #11	1.007	—
A/F sensor output voltage (bank 1 sensor 1)	A/F Sensor #11	2.329 V	V
A/F lambda (bank 1 sensor 1)	A/F Sensor #11	1.007	—
A/F sensor current (bank 1 sensor 1)	A/F Sensor #11	0.00 mA	mA
Absolute throttle opening angle 2	Absolute Throttle Pos.#2	12.2%	%
Absolute accelerator opening angle 1	Accelerator Pedal Pos.#1	14.1%	%
Absolute accelerator opening angle 2	Accelerator Pedal Pos.#2	13.7%	%
Relative acceleration opening angle	Relative Accelera. Pos.	0.0%	%
Monitoring test of misfire	Misfire monitoring(Supp)	YES	—
Monitoring test of misfire	Misfire monitoring(Rdy)	YES	—
Monitoring test of fuel system	Fuel system monitoring(Supp)	YES	—
Monitoring test of fuel system	Fuel system monitoring(Rdy)	YES	—
Monitoring test of comprehensive component	Component monitoring(Supp)	YES	—
Monitoring test of comprehensive component	Component monitoring(Rdy)	YES	—
Test of catalyst	Catalyst Diagnosis(Supp)	YES	—
Test of catalyst	Catalyst Diagnosis(Rdy)	NO	—
Test of heating-type catalyst	Heated catalyst(Supp)	NO	—
Test of heating-type catalyst	Heated catalyst(Rdy)	N/A	—
Test of evaporative emission purge control system	Evaporative purge system(Supp)	NO	—
Test of evaporative emission purge control system	Evaporative purge system(Rdy)	N/A	—
Secondary air system test	Secondary air system(Supp)	NO	—
Secondary air system test	Secondary air system(Rdy)	N/A	—
Test of air conditioning system refrigerant	A/C system refrigerant(Supp)	NO	—
Test of air conditioning system refrigerant	A/C system refrigerant(Rdy)	N/A	—
Test of oxygen sensor	Oxygen sensor(Supp)	YES	—
Test of oxygen sensor	Oxygen sensor(Rdy)	NO	—
Test of oxygen sensor heater	O2 Heater Diagnosis(Supp)	YES	—
Test of oxygen sensor heater	O2 Heater Diagnosis(Rdy)	YES	—
Test of EGR system	EGR system(Supp)	YES	—
Test of EGR system	EGR system(Rdy)	NO	—
Monitoring test of misfire	Misfire monitoring(Enable)	YES	—
Monitoring test of misfire	Misfire monitoring(Comp)	YES	—
Monitoring test of fuel system	Fuel system monitoring(Enable)	YES	—
Monitoring test of fuel system	Fuel system monitoring(Comp)	YES	—
Monitoring test of comprehensive component	Component monitoring(Enable)	YES	—
Monitoring test of comprehensive component	Component monitoring(Comp)	NO	—
Test of catalyst	Catalyst Diagnosis(Enable)	YES	—

Contents	Item	Note (at idling)	Unit
Test of catalyst	Catalyst Diagnosis(Comp)	NO	—
Test of heating-type catalyst	Heated catalyst(Enable)	N/A	—
Test of heating-type catalyst	Heated catalyst(Comp)	N/A	—
Test of evaporative emission purge control system	Evaporative purge system(Enable)	N/A	—
Test of evaporative emission purge control system	Evaporative purge system(Comp)	N/A	—
Secondary air system test	Secondary air system(Enable)	N/A	—
Secondary air system test	Secondary air system(Comp)	N/A	—
Test of air conditioning system refrigerant	A/C system refrigerant(Enable)	N/A	—
Test of air conditioning system refrigerant	A/C system refrigerant(Comp)	N/A	—
Test of oxygen sensor	Oxygen sensor(Enable)	YES	—
Test of oxygen sensor	Oxygen sensor(Comp)	NO	—
Test of oxygen sensor heater	O2 Heater Diagnosis(Enable)	YES	—
Test of oxygen sensor heater	O2 Heater Diagnosis(Comp)	YES	—
Test of EGR system	EGR system(Enable)	YES	—
Test of EGR system	EGR system(Comp)	NO	—
On-board diagnostic system	OBD System	OBD/OBD2	—
Long term fuel trim by rear oxygen sensor (bank 1)	Long Term Secondary O2 Fuel Trim #1	0.0%	%

3. DISPLAY OF ENGINE FREEZE FRAME DATA

NOTE:
• ECM updates the freeze frame data every 0.5 seconds, and always keeps the last three records. Time-series freeze frame data includes the last three freeze frame data and the freeze frame data when the DTC is detected.
• In the time-series freeze frame data, the following freeze frame data are displayed: «Detect», «History1», «History2», and «History3».
• Time lag between the freeze frame data of «Detect» and the freeze frame data of «History1» changes within the range of 0 — 0.5 seconds. This is because the freeze frame data of «Detect» is recorded when the DTC is actually detected, while the freeze frame data of «History1» is updated every 0.5 seconds.



(A) 0.5 seconds timer
(B) Changes within the range of 0 — 0.5 seconds, depending on the timing of DTC detection.

• When more than one DTCs are recorded, the time-series freeze frame data is recorded only for the first-detected DTC, and for the next DTC, just the freeze frame data of «Detect» is recorded. And for the subsequent DTCs, no freeze frame data is recorded.
• When performing diagnosis, you can utilize the time-series freeze frame data to guess the vehicle status when the DTC was detected.
• For detailed operation procedures, refer to “PC application help for Subaru Select Monitor”.
• A list of the support data is shown in the following table.

Contents	Item	Unit
Engine speed	Engine Speed	rpm
Amount of intake air	Mass Air Flow	g/s or lb/m
Vehicle speed	Vehicle speed	km/h or MPH
Throttle valve angle	Throttle Opening Angle	%
#1 Cylinder ignition timing	Ignition timing adv. #1	°
Engine coolant temperature	Coolant Temp.	°C or °F
Short term fuel trim by front oxygen (A/F) sensor (bank 1)	Short term fuel trim B1	%
Long term fuel trim by front oxygen (A/F) sensor (bank 1)	Long term fuel trim B1	%
Intake manifold absolute pressure	Mani. Absolute Pressure	kPa, mmHg, inHg or psig
Oxygen sensor (bank 1 sensor 2)	Oxygen sensor #12	V
AVCS advance angle amount RH	VVT Adv. Ang. Amount R	deg
AVCS target advance angle amount RH	VVT Advance Target Angle Amount R	deg

Contents	Item	Unit
AVCS advance angle amount LH	VVT Adv. Ang. Amount L	deg
AVCS target advance angle amount LH	VVT Advance Target Angle Amount L	deg
Exhaust AVCS retard angle amount RH	Exh. VVT Retard Ang. R	deg
Exhaust AVCS target retard angle amount RH	Ex VVT Retard Target Angle R	deg
Exhaust AVCS retard angle amount LH	Exh. VVT Retard Ang. L	deg
Exhaust AVCS target retard angle amount LH	Ex VVT Retard Target Angle L	deg
ECM power supply voltage	ECU ACC	V
A/F target lambda	Target Equivalence Ratio	—
Intake air temperature (mass air flow sensor)	IAT Sensor #11	°C or °F
Intake air temperature (intake manifold)	IAT Sensor #12	°C or °F
Estimated value of ambient temperature	Ambient Temperature	°C or °F
Engine load data	Calculated load value	%
Absolute load	Absolute Load Value	%
Atmospheric pressure	Atmosphere Pressure	kPa, mmHg, inHg or psig
Actual throttle opening angle	Actual Throttle Opening Angle	deg
Target throttle opening angle	Target Throttle Opening Angle	%
Relative throttle opening angle	Relative Throttle Pos.	%
ISC air volume correction	Idle Mass Air Flow	g/s
ISC feedback air volume correction	Idle Mass Air Flow Feedback correct	g/s
ISC air flow amount learning value	ISC Learning Value	g/s
ISC air conditioner load correction	Idle A/C load correct	g/s
ISC electric load correction	Electric Load Feedback Val	g/s
ISC throttle dirt correction	Idle dirty throttle correct	g/s
Actual fuel pressure	Fuel Rail Pressure A	kPa, mmHg, inHg or psig
Target fuel pressure	Commanded Fuel Rail Pressure A	kPa, mmHg, inHg or psig
Remaining fuel level	Fuel Level	%
Fuel level sensor resistance	Fuel level resistance	Ω
Fuel pump duty ratio	Fuel Pump Duty	%
Evaporative purge	Evap Purge	%
Purge gas density learning value	Purge Density Learn Value	%
Purge rate	Evap Purge Flow	%
Alternator control mode	Alternator control mode	—
Battery terminal voltage	Battery Terminal Voltage	V
Battery charge/discharge current	Battery Charge/Discharge Current	A
Estimated value of battery temperature	Estimated Battery Temperature	°C or °F
Remaining amount of battery	Remaining Battery Capacity	%
Air fuel ratio control system for bank 1	Fuel system for Bank 1	—
A/F sensor resistance value 1	A/F Sensor #1 Resistance	Ω
Target EGR	Commanded EGR	%
EGR deviation	EGR Error	%
#1 cylinder monitor	Cylinder Monitor #1	rpm
#2 cylinder monitor	Cylinder Monitor #2	rpm
#3 cylinder monitor	Cylinder Monitor #3	rpm
#4 cylinder monitor	Cylinder Monitor #4	rpm
Total number of ignition switch ON	Trip Count	times
Count	Count	—
Elapsed time after ignition switch ON	Time Count	ms

Contents	Item	Unit
Elapsed time after engine start	Time Since Engine Start	sec
Engine oil temperature at engine start	Initial Engine Oil Temp.	°C
Engine coolant temperature at engine start	Initial Engine Coolant Temp.	°C
Intake air temperature at engine start	Initial Intake Air Temp.	°C
Cranking time	Engine Starting Time	ms
ECM power OFF time	IG OFF Elapsed Time	sec
Elapsed time after detecting the high rotation speed	Fuel Cut Elps Time	sec
Neutral condition (CVT model)	AT drive status	—
Neutral condition (MT model)	MT gear status	—
X mode	X Mode	—
SI-DRIVE mode	SI Drive mode(Display)	—
Clutch switch (MT model)	Clutch switch	—
Stop light switch	Stop light SW	—
Ignition switch	Ignition switch	—
Pressure switch	A/C Mid Pressure Switch	—
Air conditioner compressor relay output	A/C Compressor Signal	—
Starter switch	Starter SW	—
AT turbine rotation speed (CVT model)	AT turbine speed	rpm
Lock-up condition (CVT model)	Lock up status	—
P range / N range signal (CVT model)	P/N Signal	—
Front oxygen (A/F) sensor (bank 1 sensor 1)	(Oxygen sensor #11)	—
Rear oxygen sensor (bank 1 sensor 2)	(Oxygen sensor #12)	—
A/F correction (bank 1 sensor 2)	Short term fuel trim #12	%
Absolute throttle opening angle 2	Absolute Throttle Pos.#2	%
Absolute accelerator opening angle 1	Accelerator Pedal Pos.#1	%
Absolute accelerator opening angle 2	Accelerator Pedal Pos.#2	%
OBD system	OBD System	—

4. V.I.N REGISTRATION

1) On «Main Menu» display, select {Each System Check}.
2) On «System Selection Menu» display, select {Engine Control System}.
3) Click the [OK] button after the information of engine type has been displayed.
4) On «Engine Diagnosis» display, select {Work Support}.
5) On «Work Support» display, select {Entry VIN}.
6) Perform the procedures shown on the display screen.