

Electrical Test Program – Electronic Accelerator (EA) Test

⚠ WARNING!
Risk of severe injury when touching ignition parts which produce high voltages. Do not touch ignition components.
Persons with heart pacemakers are not to perform repairs on this type of ignition system.

⚠ WARNING!
Risk of fatal injury from being pulled into rotating vehicle parts.
 Do not reach into rotating parts.
 Wear closed and tight-fitting work clothes.
 Protect vicinity of rotating vehicle components from unauthorized access.

⚠ WARNING!
 Risk of explosion from fuel igniting, risk of poisoning from inhaling and swallowing fuel as well as risk of injury to eyes and skin from contact with fuel.
 No fire, sparks, exposed flames or smoking.
 Pour fuels only into suitable and appropriately marked containers.
 Wear protective clothing when handling fuel.

Note regarding “Test Connection” column:



The numbers indicated in parentheses, for example, ⇒ 1.0 (2A) signify:
 2 = Socket 2 on wiring diagram.
 A = Connector A on wiring diagram




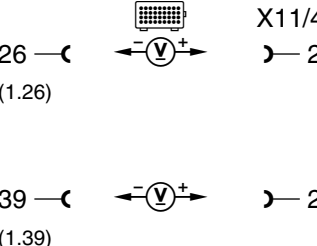
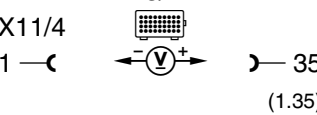
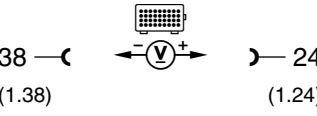
Connect interior harness connector to connection 1 on test cable.
Connect engine harness connector to connection 2 on test cable.

Preparation for Test:


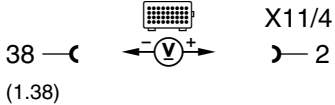
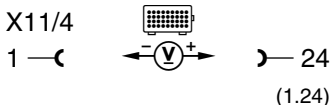
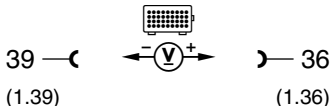
1. Review section 0,
2. Review 11, 21, 22,
3. Ignition: **OFF**,
4. Connect test cable with socket box to N3/11 or N3/12, see 22.

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
1.0	PI 587 PO 560	Left engine control module (N3/11) or Right engine control module (N3/12) Voltage supply Circuit 30	N3/11 N3/12 	Ignition: ON	11 – 14 V	⇒ 1.1


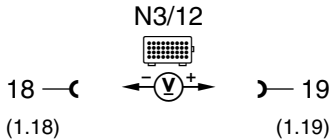
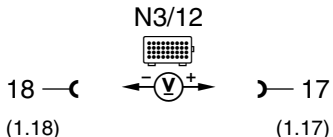
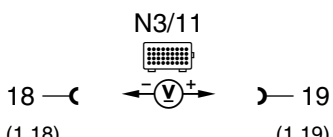
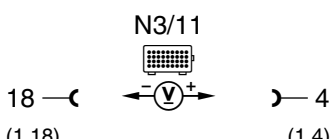
Electrical Test Program – Electronic Accelerator (EA) Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
1.1		Ground wire	<p>N3/11 N3/12</p> 	Ignition: ON	11 – 14 V	Wiring, Model 129: Ground (W27), module box bracket. Model 140: Harness ground (W15), right footwell. ⇒ 1.2
1.2		Voltage supply Circuit 30	<p>N3/11 N3/12</p> 	Ignition: ON	11 – 14 V	Wiring, Base module (N16/1) or fuse on base module,
2.0	PI 587 PO 560	Left engine control module (N3/11) or Right engine control module (N3/12) Voltage supply Circuit 87L	<p>N3/11 N3/12</p> 	Ignition: ON	11 – 14 V	⇒ 2.1


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2.1		Electronic ground	<p>N3/11 N3/12</p> 	Ignition: ON	11 – 14 V	Wiring, Model 129, 140: Electronics ground (W15), right footwell. ⇒ 2.2
2.2		Voltage supply Circuit 87L	<p>N3/11 N3/12</p> 	Ignition: ON Ignition: OFF	11 – 14 V <1 V	Wiring, Base module (N16/1) or fuse on base module, Ignition/starter switch (S2/1).
3.0	PI 587 PO 560	Left engine control module (N3/11) or Right engine control module (N3/12) Voltage supply Circuit 87M1e	<p>N3/11 N3/12</p> 	Ignition: ON Ignition: OFF	11 – 14 V <1 V	Wiring.


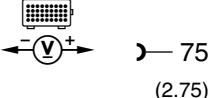
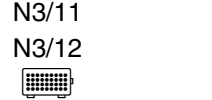
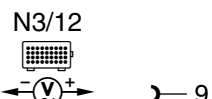
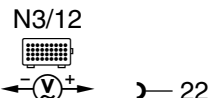
Electrical Test Program – Electronic Accelerator (EA) Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
4.0	PI 542 PO 507	Only RIGHT engine control module (N3/12) Pedal value sensor (B37) Signal Nominal value potentiometer 1	N3/12 	Ignition: ON Accelerator pedal position: CTP: 0.2 – 0.5 V WOT: 4.3 – 4.8 V	0.2 – 0.5 V 4.3 – 4.8 V	Wiring, ⇒ 4.1, B37
4.1		Voltage supply Nominal value potentiometer 1	N3/12 	Ignition: ON	4.75 – 5.25 V	N3/12
5.0	PI 542 PO 507	Only LEFT engine control module (N3/11) Pedal value sensor (B37) Signal Nominal value potentiometer 2	N3/11 	Ignition: ON Accelerator pedal position: CTP: 0.1 – 0.4 V WOT: 2.1 – 2.5 V	0.1 – 0.4 V 2.1 – 2.5 V	Wiring, ⇒ 5.1, B37
5.1		Voltage supply Nominal value potentiometer 2	N3/11 	Ignition: ON	2.25 – 2.75 V	N3/11


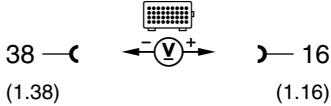
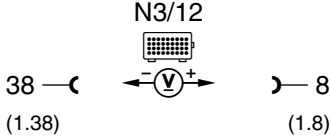
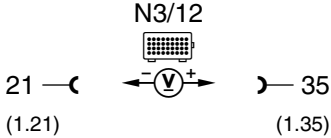
Electrical Test Program – Electronic Accelerator (EA) Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
6.0	PD 507 PD 120 PI 162 PI 186	Right EA/CC/ISC actuator (M16/3) or Left EA/CC/ISC actuator (M16/4) Signal Actual value potentiometer 1 Actual value potentiometer 2	N3/11 N3/12 	Ignition: ON Accelerator pedal position: CTP: 4.0 – 4.6 V WOT: < CTP value Accelerator pedal position: CTP: 0.3 – 0.9 V WOT: > CTP value	4.0 – 4.6 V < CTP value 0.3 – 0.9 V > CTP value	Wiring, ⇒ 6.1, M16/4 or M16/3
6.1		Voltage supply Actual value potentiometers 1 and 2	N3/11 N3/12 	Ignition: ON	4.75 – 5.25 V	N3/11 or N3/12


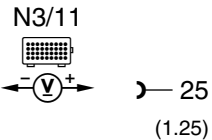
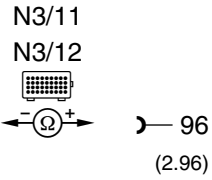
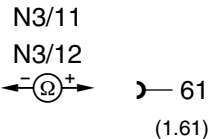
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⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
7.0	PI 186 PI 580 PI 581	Right EA/CC/ISC actuator (M16/3) or Left EA/CC/ISC actuator (M16/4) Activation of actuator motor Resistance of actuator motor	<p>N3/11 N3/12</p>  <p>74 —((2.74) —) 75 (2.75)</p> <p>N3/11 N3/12</p>  <p>74 —((2.74) —) 75 (2.75)</p>	<p>Ignition: ON Engine: at Idle</p> <p>ECT > 70 °C</p> <p>Ignition: OFF</p>	<p>1.0 – 2.3 V 1.0 – 2.5 V Value oscillates.</p> <p>< 10 Ω</p>	<p>Wiring, M16/3 or M16/4. N3/11 or N3/12</p>
8.0	PO 500	Only right engine control module (N3/12) (up to 05/98) (as of 06/98 via CAN) Left front axle VSS sensor (L6/1)	<p>N3/12</p>  <p>38 —((1.38) —) 9 (1.9)</p>	<p>Raise front of vehicle. Ignition: ON Spin left front wheel by hand.</p>	4 – 8 V	<p>Wiring, ESP see DM, Chassis & Drivetrain, Vol. 3, section 9 (ASR, ETS, ESP)</p>
9.0	PO 500	Only right engine control module (N3/12) (up to 05/98) (as of 06/98 via CAN) Left rear axle VSS sensor (L6/3)	<p>N3/12</p>  <p>38 —((1.38) —) 22 (1.22)</p>	<p>Raise rear of vehicle. Ignition: ON Spin left rear wheel by hand.</p>	4 – 8 V	<p>Wiring, ESP see DM, Chassis & Drivetrain, Vol. 3, section 9 (ASR, ETS, ESP)</p>


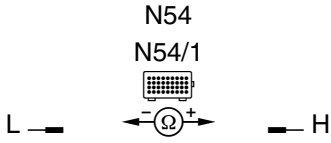
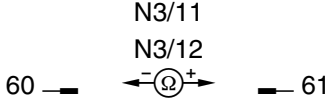
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10.0	PO 507 PI 641	CTP (idle) signal	<p>N3/11 N3/12</p> 	<p>Ignition: ON</p> <p>Accelerator pedal position:</p> <p>CTP: > 4.0 V WOT: 2.0 – 3.0 V</p>		Wiring, N3/11 or N3/12
11.0		<p>Only on RIGHT engine control module (N3/12) (up to 05/96) (as of 06/96 via CAN)</p> <p>A/C compressor signal</p>	<p>N3/12</p> 	<p>Engine: at Idle</p> <p>Turn A/C system ON, move temperature selector wheel to MIN, blower set to AUTO.</p>	<p>< 1.0 V</p> <p>11 – 14 V</p>	Wiring, A/C pushbutton control module (N22).
12.0		<p>Only on RIGHT engine control module (N3/12) (up to 05/96)</p> <p>EPC MIL (A1e43) Activation</p>	<p>N3/12</p> 	<p>Ignition: ON</p> <p>Engine: at Idle</p>	<p>11 – 14 V</p> <p>< 1.0 V</p>	Wiring, Malfunction in actuators or pedal value sensor, N3/12

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13.0		Only on LEFT engine control module (N3/11) Coding	<p>N3/11</p>  <p>45 — (1.45) 25 — (1.25)</p>	Ignition: ON	11 – 14 V	Wiring.
14.0		Ground bridge	<p>N3/11 N3/12</p>  <p>73 — (2.73) 96 — (2.96)</p>	Ignition: OFF	< 1 Ω	Wiring.
15.0	PD 600 PI 570 PI 588 PI 641 PI 747	CAN data bus	<p>N3/11 N3/12</p>  <p>60 — (1.60) 61 — (1.61)</p>	Ignition: OFF Disconnect connector 1 from test cable and test directly at connector 1 of engine wiring harness using an ohmmeter, See 22	75 – 85 Ω	⇒ 15.1, ⇒ 15.2, Data line.

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15.1		Model 129/140 up to 05/96 CAN element in RCL control module (N54) Resistance Model 129/140 as of 06/96 CAN element in DAS control module (N54/1) Resistance		Ignition: OFF Disconnect control module (N54 or N54/1) and test directly at control module.	115 – 125 Ω	N54 or N54/1
15.2		CAN element in engine control module (N3/11 or N3/12) Resistance		Ignition: OFF Disconnect connector 1 from control module (N3/11 or N3/12) and test directly at control module.	235 – 245 Ω	N3/11 or N3/12