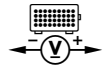
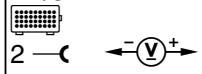
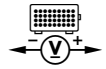
Electrical Test Program - Test (Engine Does Not Run)

Test step DTC	Scope of test	Test connection	Test condition	Nominal value	Possible cause/remedy
⇒ 1.0	**Ignition control module (N1/4 or N1/5)** Voltage supply Circuit 15	N1/4 or N1/5  2 (A.2) — 3 (A.3)	Connect socket box to N1/4 or N1/5. Ignition: **ON**	11 – 14 V	Open circuit in wire to ground, left or right front wheelhousing (W3/2 or W3/3), Open circuit in wire to base module (N16/1).
⇒ 1.1	Ground connection at W3/2 or W3/3	N1/4 or N1/5 — X11/4  2 (A.2) — 2	Ignition: **ON**	11 – 14 V	Ground (W3/2 or W3/3)
⇒ 2.0	**Ignition control module (N1/4 or N1/5)** Voltage supply Circuit 30	N1/4 or N1/5  2 (A.2) — 16 (B.8)	Ignition: **ON**	11 – 14 V	Wiring to ignition/starter switch (S2/1).

Electrical Test Program - Test (Engine Does Not Run)

Test step / DTC	Scope of test	Test connection	Test condition	Nominal value	Possible cause/remedy
⇒ 3.0	**Ignition coil (T1/1 or T1/2)** Voltage supply	T1/1 or T1/2 — W3 — Cir. 15	Ignition: **ON**	11 – 14 V	Wire from T1/1 or T1/2 to ignition/starter switch (S2/1).
⇒ 4.0	**Left or right crankshaft position sensor (L5/4 or L5/5)**	N1/4 or N1/5 [1] 18 — 17	Engine: **Crank**	Signal, see 24, Figure 1 and 2.	⇒ 4.1, ⇒ 4.2, Segments on starter ring gear.
		N1/4 or N1/5 [2] 18 — 17	Engine: **Crank**	> 0.35 V	
⇒ 4.1	Resistance from crankshaft position sensor (L5/4 or L5/5)	N1/4 or N1/5 18 — 17	Ignition: **OFF** Unplug connector (2) for L5/4 or L5/5 at ignition control module (N1/4 or N1/5) (see 24, Figure 4).	680 – 1300 Ω	⇒ 4.2

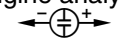
1) Test with oscilloscope.

2) Test with multimeter only if oscilloscope is unavailable.

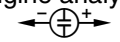
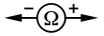
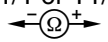
Electrical Test Program - Test (Engine Does Not Run)

Test step **DTC**	Scope of test	Test connection	Test condition	Nominal value	Possible cause/remedy
⇒ 4.2 17	Insulation of L5/4 or L5/5	N1/4 or N1/5 2 — (A.2) — 17		>200 kΩ	Crankshaft position sensor (L5/4 or L5/5).
⇒ 5.0	**Dwell angle**	Engine analyzer	Engine: **Start**	1 – 30° or 1 – 50 %	⇒ 4.0, ⇒ 5.1, Ignition control module (N1/4 or N1/5).
⇒ 5.1	Rest current shut–off	T1/1 or T1/2 Cir. 1 — V — Cir. 15	Ignition: **ON**	0 V	Ignition control module (N1/4 or N1/5) and ignition coil (T1/1 or T1/2)
		T1/1 or T1/2 Cir. 1 — V — Cir. 15	Engine: **Start**	0.3 – 0.5 V	**< 0.3 V:** Open circuit in wire from ignition coil (T1/1 or T1/2) to N1/4 or N1/5, **> 0.5 V:** Ignition coil T1/1 or T1/2.

Electrical Test Program - Test (Engine Does Not Run)

Test step **DTC**	Scope of test	Test connection	Test condition	Nominal value	Possible cause/remedy
⇒ 6.0	**Ignition coil (T1/1 or T1/2)** Primary voltage	Engine analyzer  Primary pattern measurement range 400 V, duration 100%, voltage signal pick-up connected to ignition coil (T1/1 or T1/2).	Engine: **Start**	200 – 350 V	Ignition control module (N1/4 or N1/5), Ignition coil (T1/1 or T1/2).

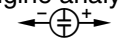
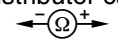
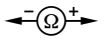
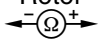
Electrical Test Program - Test (Engine Does Not Run)

Test step	DTC	Scope of test	Test connection	Test condition	Nominal value	Possible cause/remedy
⇒ 7.0	15	**Ignition coil (T1/1 or T1/2)** Firing voltage	Engine analyzer  Secondary pattern measurement range 10 kV, duration 100%, voltage signal pick-up connected to ignition coil (T1/1 or T1/2).	Engine: **Start**	8 – 20 kV	⇒ 7.1, ⇒ 7.2, Ignition control module (N1/4 or N1/5).
⇒ 7.1	15	Primary winding of ignition coil (T1/1 or T1/2)	T1/1 or T1/2 Cir. 1  Cir. 15	Ignition: **OFF** Disconnect wires of circuit 1 and 15 at ignition coil (T1/1 or T1/2).	0.3 – 0.6 Ω	Ignition coil (T1/1 or T1/2).
⇒ 7.2	15	Secondary winding of ignition coil (T1/1 or T1/2)	T1/1 or T1/2 Cir. 1  Cir. 4	Ignition: **OFF** Disconnect wire of circuit 4 from ignition coil (T1/1 or T1/2).	8 – 13 kΩ	Ignition coil (T1/1 or T1/2).

Electrical Test Program - Test (Engine Does Not Run)

Test step **DTC**	Scope of test	Test connection	Test condition	Nominal value	Possible cause/remedy
⇒ 8.0	**Left high voltage distributor (S5/5)** Firing voltage	Engine analyzer Secondary Parade, measurement range 20 kV, voltage signal pick-up connected to ignition cable for cylinder 7.	Engine: **Start**	8 – 20 kV	⇒ 8.1, ⇒ 8.2,
⇒ 8.1	Distributor cap (individual terminals)	Distributor cap inside outside center center outside electrode	Ignition: **OFF** Remove distributor cap. Unplug ignition cables (Disconnect cables one at a time).	700 – 1300 Ω at each connection	Distributor cap,
⇒ 8.2	Rotor	Rotor center point	Distributor cap removed.	700 – 1300 Ω and visual inspection	Rotor.

Electrical Test Program - Test (Engine Does Not Run)

Test step **DTC**	Scope of test	Test connection	Test condition	Nominal value	Possible cause/remedy
⇒ 9.0	**Right high voltage distributor (S5/6)** Firing voltage	Engine analyzer  Secondary Parade, measurement range 20 kV, voltage signal pick–up connected to ignition cable for cylinder 1.	Engine: **Start**	8 – 20 kV	⇒ 9.1, ⇒ 9.2,
⇒ 9.1	Distributor cap (individual terminals)	Distributor cap inside  outside center  center outside electrode	Ignition: **OFF** Remove distributor cap. Unplug ignition cables (Disconnect cables one at a time).	700 – 1300 Ω at each connection	Distributor cap,
⇒ 9.2	Rotor	Rotor center  point	Distributor cap removed.	700 – 1300 Ω and visual inspection.	Rotor.