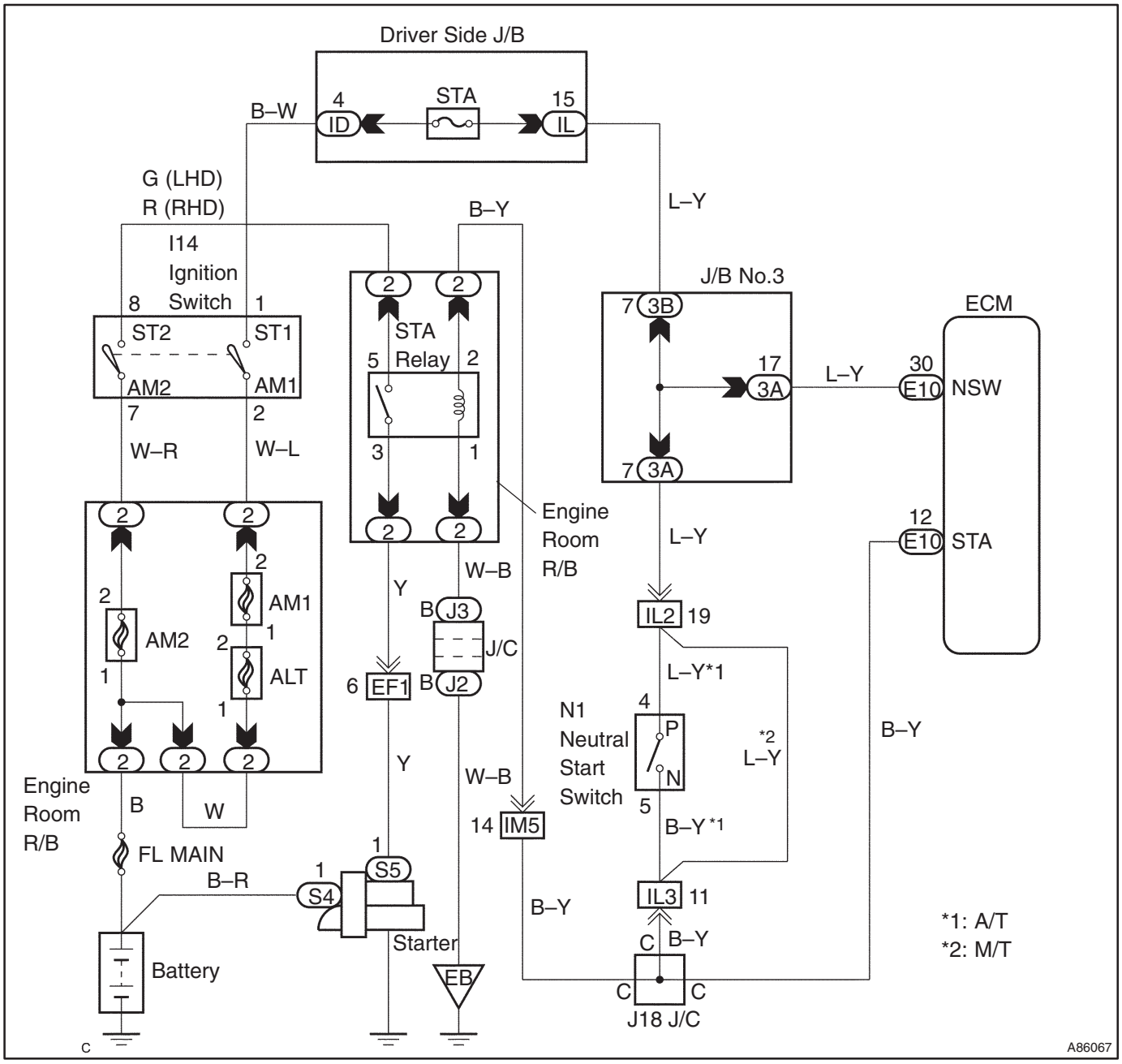
STARTER SIGNAL CIRCUIT

CIRCUIT DESCRIPTION

While the engine is being cranked, the battery voltage is applied to terminal STA of the ECM.

WIRING DIAGRAM



HINT:

Read freeze frame data using the intelligent tester II. Freeze frame data record the engine condition when malfunctions are detected. When troubleshooting, freeze frame data can help determine if the vehicle was moving or stationary, if the engine was warmed up or not, if the air–fuel ratio was lean or rich, and other data from the time the malfunction occurred.

1 READ VALUE OF INTELLIGENT TESTER II(STA SIGNAL)

(a) Connect the intelligent tester II to the DLC3.
(b) Turn the ignition switch to ON and turn the intelligent tester II ON.
(c) Select the following menu items: Powertrain / Engine and ECT / Data List / Starter SIG.
(d) Check the result when the ignition switch is turned to the ON and START positions.

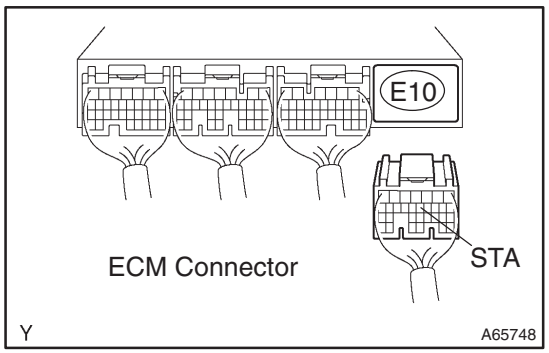
Standard:

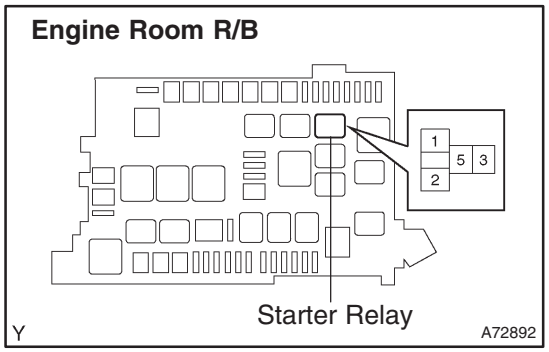
Ignition Switch Position	ON	START
STARTER SIG	OFF	ON

OK → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN ON PROBLEM SYMPTOMS TABLE (See page 05–8)**

NG

2 CHECK HARNESS AND CONNECTOR(ECM – STA RELAY)





(a) Disconnect the E10 ECM connector.
(b) Remove the ST relay from the engine room R/B.
(c) Measure the resistance according to the value(s) in the table below.

Standard (Check for open):

Tester Connection	Specified Condition
STA – relay (2) – STA (E10–12)	Below 1 Ω

Standard (Check for short):

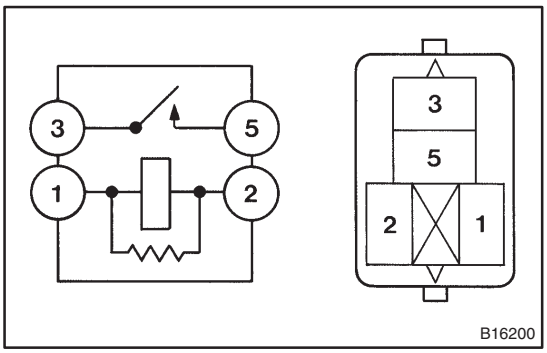
Tester Connection	Specified Condition
STA – relay (2) or STA (E10–12) – Body ground	10 kΩ or higher

(d) Reconnect the ECM connector.
(e) Reinstall the STA relay.

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

3 INSPECT STARTER RELAY



(a) Remove the STA relay from the engine room R/B.

(b) Check the STA relay resistance.

Standard:

Tester Condition	Specified Condition
3 – 5	10 kΩ or higher
3 – 5	Below 1 Ω (when battery voltage applied to terminals 1 and 2)

(c) Reinstall the STA relay.

NG → **REPLACE STARTER RELAY**

OK

REPLACE ECM (See page 10–12)