11.Diagnostic Procedure with Diagnostic Trouble Code (DTC)

A: DTC 11 TIRE 1 AIR PRESSURE DECREASE

NOTE:
Refer to DTC 14 for diagnostic procedure. <Ref. to TPM(diag)-28, DTC 14 TIRE 4 AIR PRESSURE DECREASE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

B: DTC 12 TIRE 2 AIR PRESSURE DECREASE

NOTE:
Refer to DTC 14 for diagnostic procedure. <Ref. to TPM(diag)-28, DTC 14 TIRE 4 AIR PRESSURE DECREASE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

C: DTC 13 TIRE 3 AIR PRESSURE DECREASE

NOTE:
Refer to DTC 14 for diagnostic procedure. <Ref. to TPM(diag)-28, DTC 14 TIRE 4 AIR PRESSURE DECREASE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

D: DTC 14 TIRE 4 AIR PRESSURE DECREASE

DTC DETECTING CONDITION:
Inflation pressure of each tire reduces under specifications (188 kPa (1.9 kgf/cm^2, 27.3 psi) or less).
TROUBLE SYMPTOM:
Tire pressure warning light illuminates.

	Step	Check	Yes	No
1	**CHECK TIRES.** Lift up the vehicle and check for damage in the tires.	Are there cracks or damage?	Repair or replace the tire. <Ref. to WT-7, Tire.>	Go to step **2**.
2	**CHECK TIRES.** Check the tire air pressure.	Is the tire pressure in the specifications?	Go to step **3**.	Adjust the air pressure.
3	**CHECK TRANSMITTER.** Drive the vehicle at a speed more than 40 km/h (25 MPH) and compare the data from the transmitter on the four wheels.	Is there a transmitter with different data?	Replace the transmitter (tire pressure sensor). <Ref. to WT-12, Tire Pressure Monitoring System.>	Go to step **4**.
4	**PERFORM DRIVING TEST.** 1) Perform the Clear Memory Mode. <Ref. to TPM(diag)-9, CLEAR MEMORY, OPERATION, Subaru Select Monitor.> 2) Perform the driving test. <Ref. to TPM(diag)-17, PROCEDURE, Inspection Mode.> 3) Read the DTC. <Ref. to TPM(diag)-8, READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Subaru Select Monitor.>	Is DTC displayed?	Record the DTC. Perform the repair according to DTC. <Ref. to TPM(diag)-26, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

CAUTION:
When driving vehicle to perform driving test, there should be always 2 persons (driver and checker) to check.

E: DTC 21 TRANSMITTER 1 NO DATA

NOTE:
Refer to DTC 24 for diagnostic procedure. <Ref. to TPM(diag)-30, DTC 24 TRANSMITTER 4 NO DATA, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

F: DTC 22 TRANSMITTER 2 NO DATA

NOTE:
Refer to DTC 24 for diagnostic procedure. <Ref. to TPM(diag)-30, DTC 24 TRANSMITTER 4 NO DATA, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

G: DTC 23 TRANSMITTER 3 NO DATA

NOTE:
Refer to DTC 24 for diagnostic procedure. <Ref. to TPM(diag)-30, DTC 24 TRANSMITTER 4 NO DATA, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

H: DTC 24 TRANSMITTER 4 NO DATA

DTC DETECTING CONDITION:
Data from each transmitter is not received for 8 minutes.
TROUBLE SYMPTOM:
Tire pressure warning light blinks 25 times and then illuminates.

	Step	Check	Yes	No
1	**START FL TRANSMITTER.** 1) Connect the Subaru Select Monitor and then turn the ignition switch to ON. 2) Select “Transmitter ID”. <Ref. to TPM(diag)-10, DISPLAY TRANSMITTER (ID), OPERATION, Subaru Select Monitor.> 3) Use the transmitter registration tool and transmit the ID from the FL transmitter to check “Latest reception ID”.	Is “Latest reception ID” updated?	Go to step **2**.	Replace front left transmitter. <Ref. to WT-12, REMOVAL, Tire Pressure Monitoring System.>
2	**CHECK FL TRANSMITTER ID.** Check the ID displayed in the updated ID display and the tire 1 registered ID.	Are the two IDs same?	Go to step **3**.	Record the received ID update as the FL transmitter. Go to step **3**.
3	**START FR TRANSMITTER.** Use the transmitter registration tool and transmit the ID from the FR transmitter to check “Latest reception ID”.	Is “Latest reception ID” updated?	Go to step **4**.	Replace the front right transmitter. <Ref. to WT-12, REMOVAL, Tire Pressure Monitoring System.>
4	**CHECK FR TRANSMITTER ID.** Check the ID displayed in the updated ID display and the tire 2 registered ID.	Are the two IDs same?	Go to step **5**.	Record the received ID update as the FR transmitter. Go to step **5**.
5	**START RR TRANSMITTER.** Use the transmitter registration tool and transmit the ID from the RR transmitter to check “Latest reception ID”.	Is “Latest reception ID” updated?	Go to step **6**.	Replace the RR transmitter. <Ref. to WT-12, REMOVAL, Tire Pressure Monitoring System.>
6	**CHECK RR TRANSMITTER ID.** Check the ID displayed in the updated ID display and the tire 3 registered ID.	Are the two IDs same?	Go to step **7**.	Record the received ID update as the RR transmitter. Go to step **7**.
7	**START RL TRANSMITTER.** Use the transmitter registration tool and transmit the ID from the RL transmitter to check “Latest reception ID”.	Is “Latest reception ID” updated?	Go to step **8**.	Replace the RL transmitter. <Ref. to WT-12, REMOVAL, Tire Pressure Monitoring System.>
8	**CHECK RL TRANSMITTER ID.** Check the ID displayed in the updated ID display and the tire 4 registered ID.	Are the two IDs same?	Go to step **9**.	Record the received ID update as the RL transmitter. Go to step **9**.
9	**CHECK MALFUNCTION TRANSMITTER.**	Is ID recorded by this procedure?	Go to step **10**.	Go to step **1**.

	Step	Check	Yes	No
10	**CHECK MALFUNCTION TRANSMITTER.** Check the registered ID of the transmitter indicated by DTC.	Is there checked ID in the record?	Replace the transmitter of the recorded position. <Ref. to WT-12, REMOVAL, Tire Pressure Monitoring System.>	Replace the transmitter showing the latest ID that is not included in the registered IDs. <Ref. to WT-12, REMOVAL, Tire Pressure Monitoring System.>

CAUTION:
When driving vehicle to perform driving test, there should be always 2 persons (driver and checker) to check.

I: DTC 31 TRANSMITTER 1 PRESSURE DATA ABNORMAL

NOTE:
Refer to DTC 34 for diagnostic procedure. <Ref. to TPM(diag)-32, DTC 34 TRANSMITTER 4 PRESSURE DATA ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

J: DTC 32 TRANSMITTER 2 PRESSURE DATA ABNORMAL

NOTE:
Refer to DTC 34 for diagnostic procedure. <Ref. to TPM(diag)-32, DTC 34 TRANSMITTER 4 PRESSURE DATA ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

K: DTC 33 TRANSMITTER 3 PRESSURE DATA ABNORMAL

NOTE:
Refer to DTC 34 for diagnostic procedure. <Ref. to TPM(diag)-32, DTC 34 TRANSMITTER 4 PRESSURE DATA ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

L: DTC 34 TRANSMITTER 4 PRESSURE DATA ABNORMAL

DTC DETECTING CONDITION:

- When comparing the data from each transmitter to the previous data, the change is large.
- The pressure exceeds what the transmitter can measure. (Excessive pressure)

TROUBLE SYMPTOM:

Tire pressure warning light blinks 25 times and then illuminates.

	Step	Check	Yes	No
1	**START FL TRANSMITTER.** 1) Connect the Subaru Select Monitor and then turn the ignition switch to ON. 2) Select “Transmitter ID data monitor”. <Ref. to TPM(diag)-10, DISPLAY TRANSMITTER (ID), OPERATION, Subaru Select Monitor.> 3) Use the transmitter registration tool and transmit the ID from the FL transmitter to check “Latest reception ID”.	Is “Latest reception ID” updated?	Go to step **2**.	Replace front left transmitter. <Ref. to WT-12, REMOVAL, Tire Pressure Monitoring System.>
2	**CHECK FL TRANSMITTER ID.** Check the ID displayed in the updated ID display and the tire 1 registered ID.	Are the two IDs same?	Go to step **3**.	Record the received ID update as the FL transmitter. Go to step **3**.
3	**START FR TRANSMITTER.** Use the transmitter registration tool and transmit the ID from the FR transmitter to check “Latest reception ID”.	Is “Latest reception ID” updated?	Go to step **4**.	Replace the front right transmitter. <Ref. to WT-12, REMOVAL, Tire Pressure Monitoring System.>
4	**CHECK FR TRANSMITTER ID.** Check the ID displayed in the updated ID display and the tire 2 registered ID.	Are the two IDs same?	Go to step **5**.	Record the received ID update as the FR transmitter. Go to step **5**.
5	**START RR TRANSMITTER.** Use the transmitter registration tool and transmit the ID from the RR transmitter to check “Latest reception ID”.	Is “Latest reception ID” updated?	Go to step **6**.	Replace the RR transmitter. <Ref. to WT-12, REMOVAL, Tire Pressure Monitoring System.>
6	**CHECK RR TRANSMITTER ID.** Check the ID displayed in the updated ID display and the tire 3 registered ID.	Are the two IDs same?	Go to step **7**.	Record the received ID update as the RR transmitter. Go to step **7**.
7	**START RL TRANSMITTER.** Use the transmitter registration tool and transmit the ID from the RL transmitter to check “Latest reception ID”.	Is “Latest reception ID” updated?	Go to step **8**.	Replace the RL transmitter. <Ref. to WT-12, REMOVAL, Tire Pressure Monitoring System.>
8	**CHECK RL TRANSMITTER ID.** Check the ID displayed in the updated ID display and the tire 4 registered ID.	Are the two IDs same?	Go to step **9**.	Record the received ID update as the RL transmitter. Go to step **9**.
9	**CHECK MALFUNCTION TRANSMITTER.**	Is ID recorded by this procedure?	Go to step **10**.	Go to step **1**.
10	**CHECK MALFUNCTION TRANSMITTER.** Check the registered ID of the transmitter indicated by DTC.	Is there checked ID in the record?	Replace the transmitter of the recorded position. <Ref. to WT-12, REMOVAL, Tire Pressure Monitoring System.>	Replace the transmitter showing the latest ID that is not included in the registered IDs. <Ref. to WT-12, REMOVAL, Tire Pressure Monitoring System.>

M: DTC 41 TRANSMITTER 1 FUNCTION CODE ABNORMAL

NOTE:
Refer to DTC 44 for diagnostic procedure. <Ref. to TPM(diag)-34, DTC 44 TRANSMITTER 4 FUNCTION CODE ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

N: DTC 42 TRANSMITTER 2 FUNCTION CODE ABNORMAL

NOTE:
Refer to DTC 44 for diagnostic procedure. <Ref. to TPM(diag)-34, DTC 44 TRANSMITTER 4 FUNCTION CODE ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

O: DTC 43 TRANSMITTER 3 FUNCTION CODE ABNORMAL

NOTE:
Refer to DTC 44 for diagnostic procedure. <Ref. to TPM(diag)-34, DTC 44 TRANSMITTER 4 FUNCTION CODE ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

P: DTC 44 TRANSMITTER 4 FUNCTION CODE ABNORMAL

DTC DETECTING CONDITION:
Unexpected function codes received from each transmitter.
TROUBLE SYMPTOM:
Tire pressure warning light blinks 25 times and then illuminates.

	Step	Check	Yes	No
1	**START FL TRANSMITTER.** 1) Connect the Subaru Select Monitor and then turn the ignition switch to ON. 2) Select “Transmitter ID”. <Ref. to TPM(diag)-10, DISPLAY TRANSMITTER (ID), OPERATION, Subaru Select Monitor.> 3) Use the transmitter registration tool and transmit the ID from the FL transmitter to check “Latest reception ID”.	Is “Latest reception ID” updated?	Go to step **2**.	Replace front left transmitter. <Ref. to WT-12, REMOVAL, Tire Pressure Monitoring System.>
2	**CHECK FL TRANSMITTER ID.** Check the ID displayed in the updated ID display and the tire 1 registered ID.	Are the two IDs same?	Go to step **3**.	Record the received ID update as the FL transmitter. Go to step **3**.
3	**START FR TRANSMITTER.** Use the transmitter registration tool and transmit the ID from the FR transmitter to check “Latest reception ID”.	Is “Latest reception ID” updated?	Go to step **4**.	Replace the front right transmitter. <Ref. to WT-12, REMOVAL, Tire Pressure Monitoring System.>
4	**CHECK FR TRANSMITTER ID.** Check the ID displayed in the updated ID display and the tire 2 registered ID.	Are the two IDs same?	Go to step **5**.	Record the received ID update as the FR transmitter. Go to step **5**.
5	**START RR TRANSMITTER.** Use the transmitter registration tool and transmit the ID from the RR transmitter to check “Latest reception ID”.	Is “Latest reception ID” updated?	Go to step **6**.	Replace the RR transmitter. <Ref. to WT-12, REMOVAL, Tire Pressure Monitoring System.>
6	**CHECK RR TRANSMITTER ID.** Check the ID displayed in the updated ID display and the tire 3 registered ID.	Are the two IDs same?	Go to step **7**.	Record the received ID update as the RR transmitter. Go to step **7**.
7	**START RL TRANSMITTER.** Use the transmitter registration tool and transmit the ID from the RL transmitter to check “Latest reception ID”.	Is “Latest reception ID” updated?	Go to step **8**.	Replace the RL transmitter. <Ref. to WT-12, REMOVAL, Tire Pressure Monitoring System.>
8	**CHECK RL TRANSMITTER ID.** Check the ID displayed in the updated ID display and the tire 4 registered ID.	Are the two IDs same?	Go to step **9**.	Record the received ID update as the RL transmitter. Go to step **9**.
9	**CHECK MALFUNCTION TRANSMITTER.**	Is ID recorded by this procedure?	Go to step **10**.	Go to step **1**.
10	**CHECK MALFUNCTION TRANSMITTER.** Check the registered ID of the transmitter indicated by DTC.	Is there checked ID in the record?	Replace the transmitter of the recorded position. <Ref. to WT-12, REMOVAL, Tire Pressure Monitoring System.>	Replace the transmitter showing the latest ID that is not included in the registered IDs. <Ref. to WT-12, REMOVAL, Tire Pressure Monitoring System.>

Q: DTC 51 TRANSMITTER 1 BATTERY VOLTAGE DECREASE

NOTE:
Refer to DTC 54 for diagnostic procedure. <Ref. to TPM(diag)-35, DTC 54 TRANSMITTER 4 BATTERY VOLTAGE DECREASE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

R: DTC 52 TRANSMITTER 2 BATTERY VOLTAGE DECREASE

NOTE:
Refer to DTC 54 for diagnostic procedure. <Ref. to TPM(diag)-35, DTC 54 TRANSMITTER 4 BATTERY VOLTAGE DECREASE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

S: DTC 53 TRANSMITTER 3 BATTERY VOLTAGE DECREASE

NOTE:
Refer to DTC 54 for diagnostic procedure. <Ref. to TPM(diag)-35, DTC 54 TRANSMITTER 4 BATTERY VOLTAGE DECREASE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

T: DTC 54 TRANSMITTER 4 BATTERY VOLTAGE DECREASE

DTC DETECTING CONDITION:
Low battery signals received 20 times from each transmitter.
TROUBLE SYMPTOM:
Tire pressure warning light blinks 25 times and then illuminates.

	Step	Check	Yes	No
1	**CHECK TRANSMITTER.** 1) Replace all transmitters with new parts and register their IDs. <Ref. to WT-12, TRANSMITTER (TIRE PRESSURE SENSOR), REMOVAL, Tire Pressure Monitoring System.> <Ref. to TPM(diag)-10, REGISTER TRANSMITTER (ID), OPERATION, Subaru Select Monitor.> 2) Perform the Clear Memory Mode, and perform driving test.	Is the fault eliminated?	Transmitter embedded battery has worn out. <Ref. to WT-12, TRANSMITTER (TIRE PRESSURE SENSOR), REMOVAL, Tire Pressure Monitoring System.>	Replace the tire pressure monitoring control module. <Ref. to WT-12, TIRE PRESSURE MONITORING CONTROL MODULE, REMOVAL, Tire Pressure Monitoring System.>

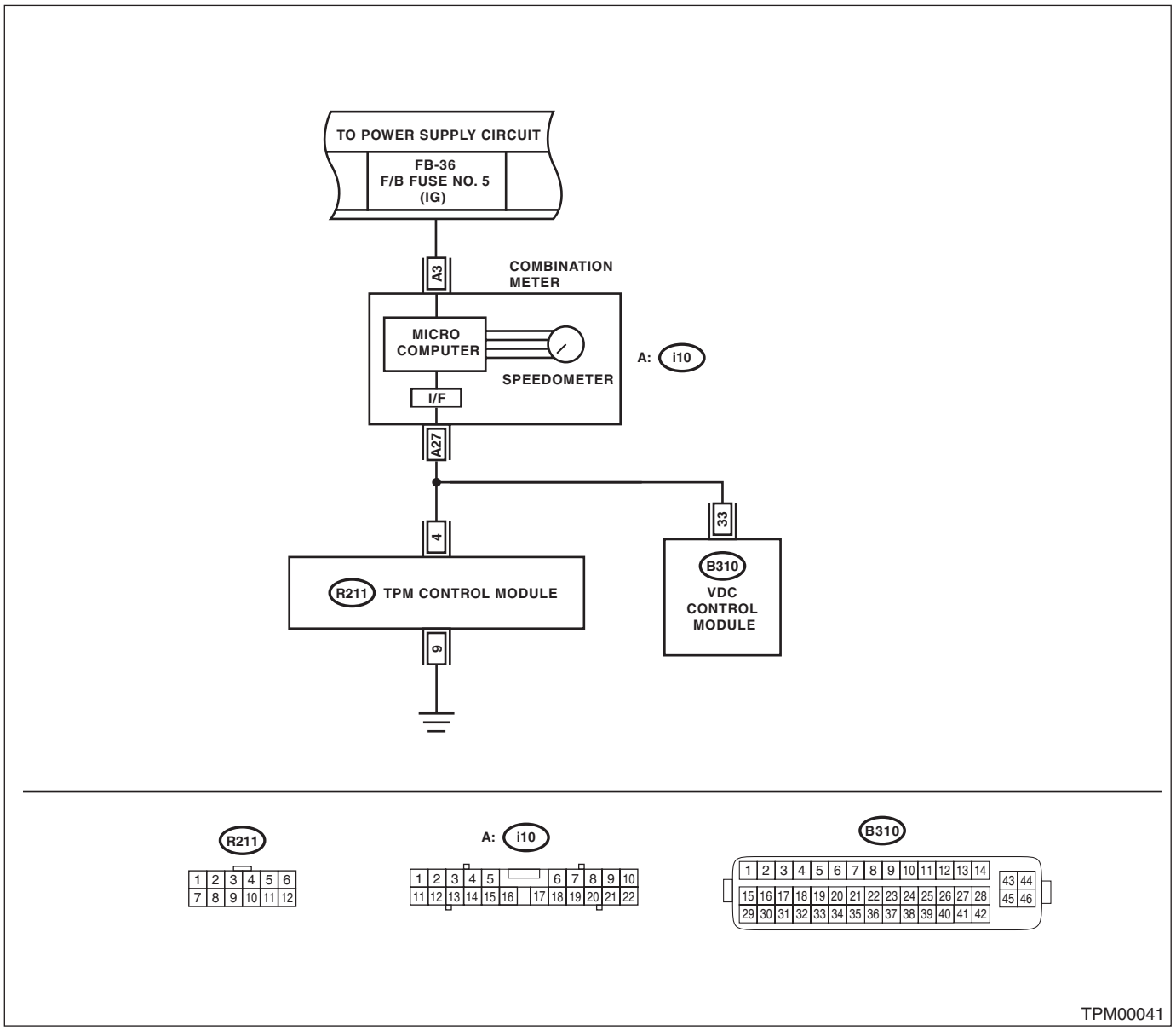
U: DTC 61 VEHICLE SPEED IS ABNORMAL

DTC DETECTING CONDITION:
Vehicle speed function codes were received from the transmitter, but the vehicle speed signal was not input to the module.

TROUBLE SYMPTOM:
Tire pressure warning light blinks.

1. VDC CONTROL MODULE IDENTIFICATION MARK W2

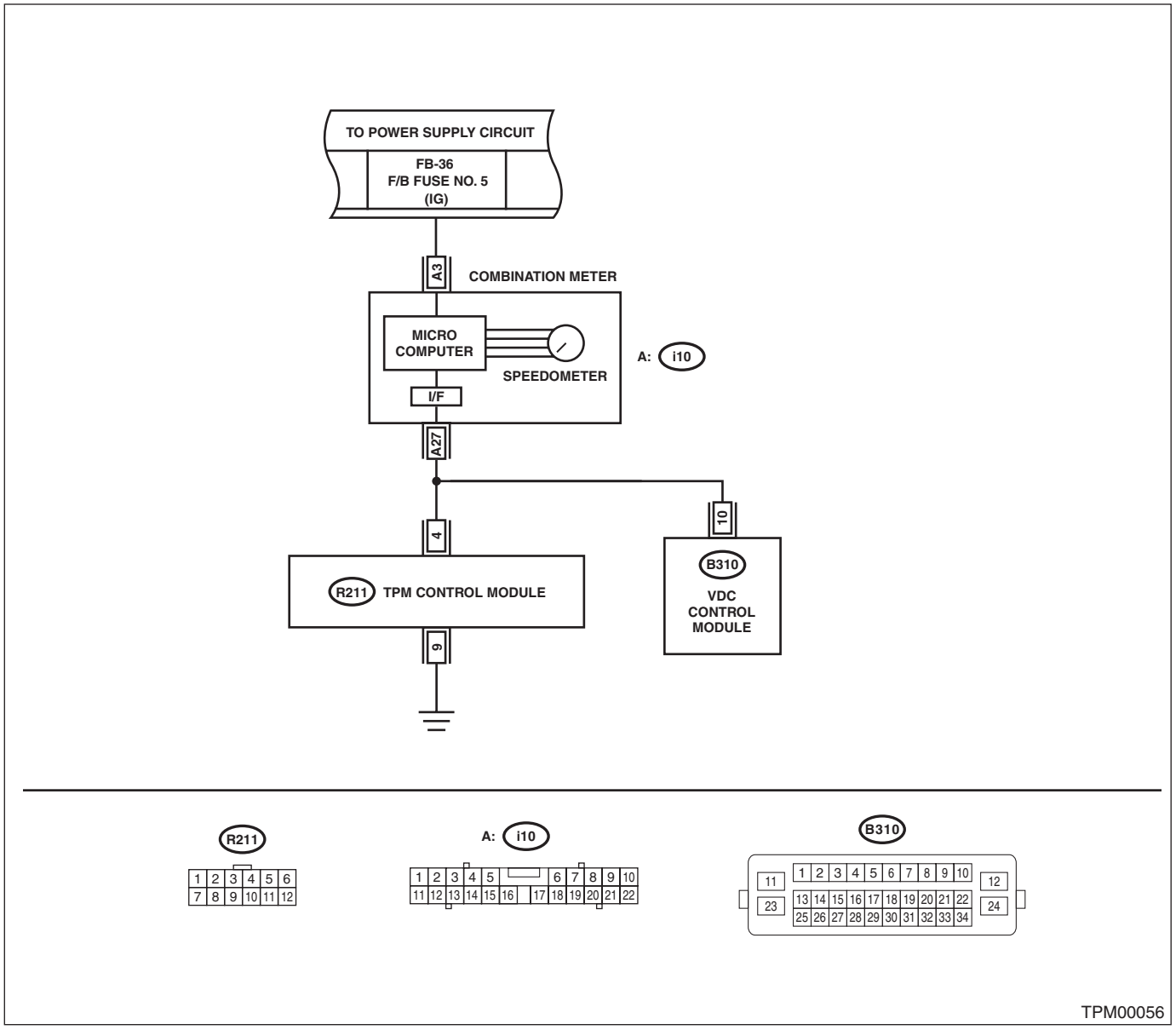
WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK TIRE PRESSURE MONITORING CONTROL MODULE.** 1) Connect an oscilloscope to the terminal No. 4 of the tire pressure monitoring control module connector (R211). 2) Drive the vehicle at 40 km/h (25 MPH) and check the vehicle speed signal at that time.	Is the vehicle speed being input?	Replace the tire pressure monitoring control module. <Ref. to WT-12, REMOVAL, Tire Pressure Monitoring System.>	Go to step **2**.
2	**CHECK HARNESS.** 1) Disconnect the combination meter connector (i10). 2) Connect the tire pressure monitoring control module connector (R211) and combination meter connector (i10) and measure the resistance.	Is the resistance 0.5 Ω or less?	Check the combination meter. <Ref. to IDI-12, REMOVAL, Combination Meter.>	Repair or replace the open circuit of the harness.

2. VDC CONTROL MODULE IDENTIFICATION MARK W3

WIRING DIAGRAM:



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Step		Check	Yes	No
1	**CHECK TIRE PRESSURE MONITORING CONTROL MODULE.** 1) Connect an oscilloscope to the terminal No. 4 of the tire pressure monitoring control module connector (R211). 2) Drive the vehicle at 40 km/h (25 MPH) and check the vehicle speed signal at that time.	Is the vehicle speed being input?	Replace the tire pressure monitoring control module. <Ref. to WT-12, REMOVAL, Tire Pressure Monitoring System.>	Go to step **2**.
2	**CHECK HARNESS.** 1) Disconnect the combination meter connector (i10). 2) Connect the tire pressure monitoring control module connector (R211) and combination meter connector (i10) and measure the resistance.	Is the resistance 0.5 Ω or less?	Check the combination meter. <Ref. to IDI-12, REMOVAL, Combination Meter.>	Repair or replace the open circuit of the harness.