

1A



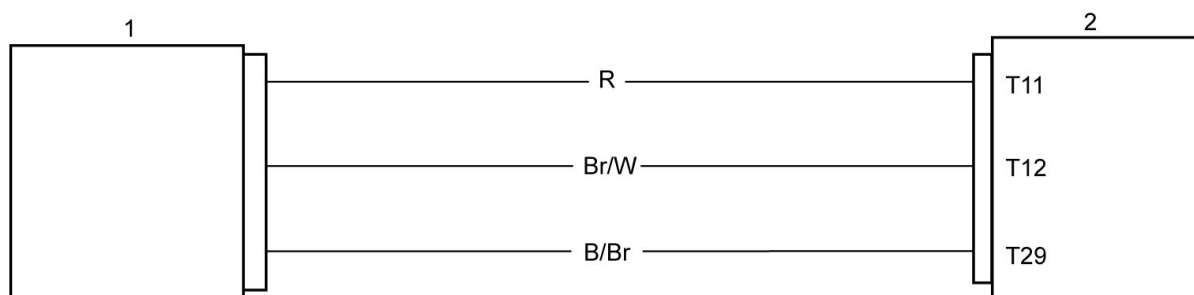
## DTC P1651-H / P1651-L (C23)

### DTC Detecting Condition and Trouble Area

DTC detecting condition	Trouble area
<b>P1651-H: TO Sensor Circuit High Voltage</b> The sensor output voltage is higher than the specified value.	<ul style="list-style-type: none"><li>• TO sensor</li><li>• TO sensor circuit</li><li>• ECM</li></ul>
<b>P1651-L: TO Sensor Circuit Low Voltage</b> The sensor output voltage is lower than the specified value.	
<b>C23: TO Sensor Circuit Malfunction</b> The sensor output voltage is not within 0.20 – 4.80 V.	


### Wiring Diagram

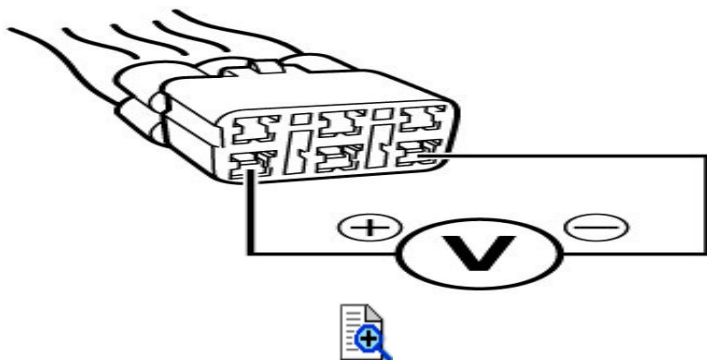
Refer to [FI System Wiring Diagram](#).



1. TO sensor	2. ECM
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### Troubleshooting

Step	Action	Yes	No
<b>1</b>	<b>TO sensor power supply circuit check</b> 1) Turn the ignition switch OFF. 2) Disconnect the TO sensor coupler.  3) Check for proper terminal connection to the TO sensor coupler. 4) If connections are OK, turn the ignition switch ON. 5) Measure the voltage between the R wire and B/Br wire.	Go to Step 3.	Go to Step 2.

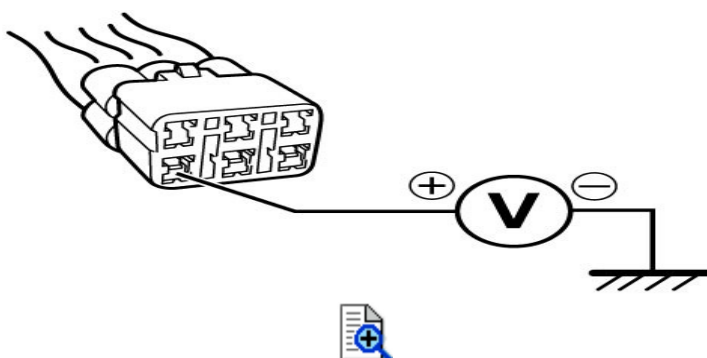


**Is voltage 4.5 – 5.5 V?**

**2**

### TO sensor ground circuit check

- 1) Measure the voltage between the R wire and ground.




**Is voltage 4.5 – 5.5?**

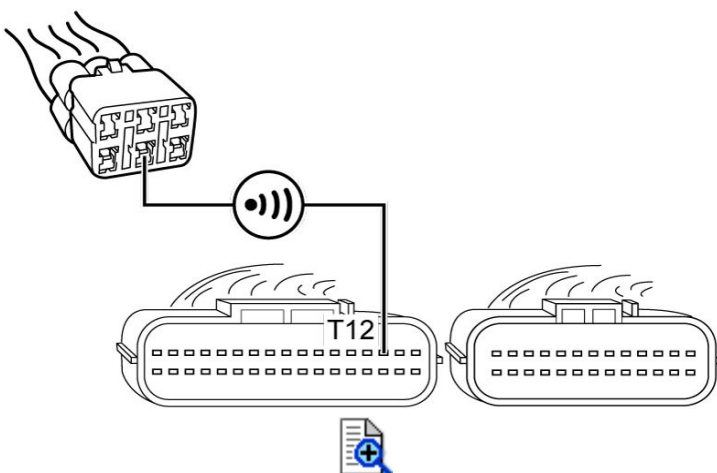
Repair or replace the B/Br wire.

Repair or replace the R wire.

**3**

### TO sensor signal circuit check

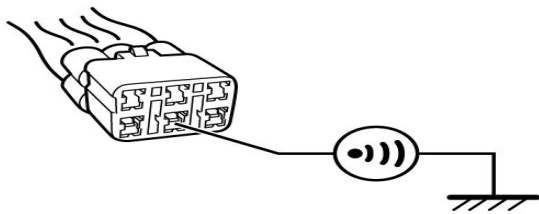
- 1) Turn the ignition switch OFF.
- 2) Disconnect the ECM couplers. 
- 3) Check for proper terminal connection to the ECM couplers.
- 4) If connections are OK, check the following points.
  - Resistance
    - Br/W wire: less than 1  $\Omega$



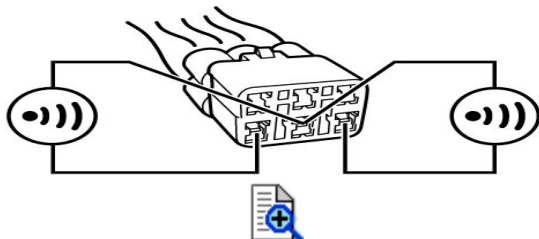
- Between Br/W wire and ground: infinity

Go to Step 4.

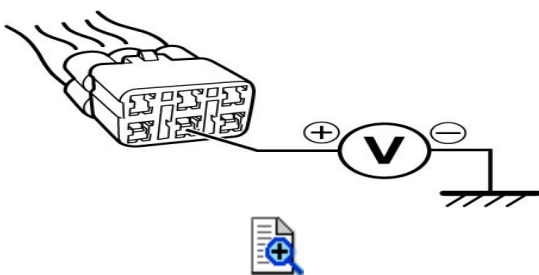
Repair or replace the Br/W wire.



- Between Br/W wire terminal and other terminal at TO sensor coupler: infinity



- Voltage
  - Turn the ignition switch ON.
  - Br/W wire: approx. 0 V

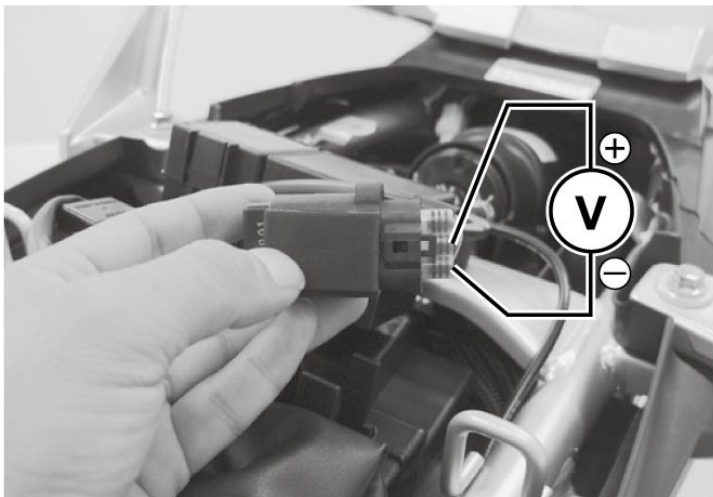



**Is check result OK?**

**4**

#### TO sensor output voltage check

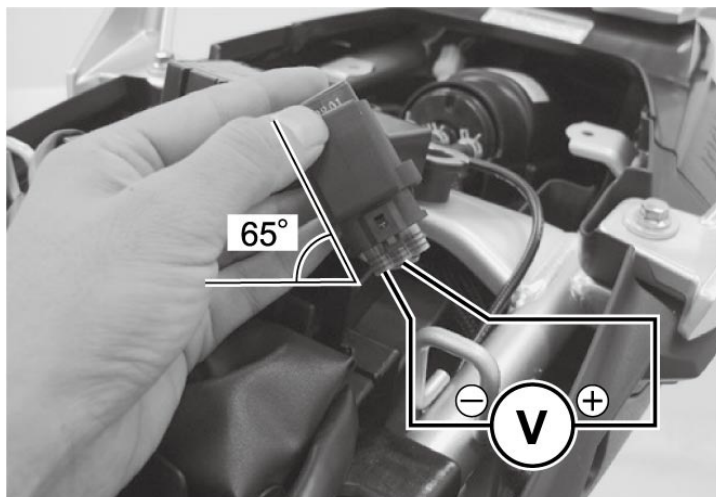
- 1) Turn the ignition switch OFF.
- 2) Connect the ECM coupler and TO sensor coupler.
- 3) Check the following points.
  - Voltage
    - Br/W wire and B/Br wire: 0.4 – 1.4 V



Replace the ECM with a known good one, and inspect it again. 

Replace the TO sensor with a new one. 

- Br/W wire and B/Br wire when TO sensor is learned 65° or more, left and right, from the horizontal level: 3.7 – 4.4 V



***Is check result OK?***