M16/6 (Throttle Valve Actuator) : Line Mixed Up / Positioner Fault (P0120)

Check Component M16/6 (Throttle Valve Actuator).

Test 1 **Check Component M16/6 (Throttle Valve Actuator) Using Actual Value.**

Test 2 **Test Component M16/6m1 (Actuator Motor) by Actuation.**

Test 3 **Test Internal Resistance of Component M16/6m1 (Actuator Motor).**

Test 4 **Test Internal Resistance of Component M16/6 (Throttle Valve Actuator).**

Test 5 **Test Voltage Supply of the Potentiometers of Component M16/6 (Throttle Valve Actuator).**

1 **Check Component M16/6 (Throttle Valve Actuator) Using Actual Value.**

Test requirement

- **Ignition ON**

Status of the relevant actual values:

- **M16/6 (throttle valve actuator) Signal 1: Note! Communication with ECU required**
- **M16/6 (throttle valve actuator) Signal 2: Note! Communication with ECU required**

Specified values

- **M16/6 (throttle valve actuator)Signal 1(Accelerator not operated): [0.30...0.90] V**
- **M16/6 (throttle valve actuator)Signal 2(Accelerator not operated): [4.20...4.60] V**
- **M16/6 (throttle valve actuator)Signal 1(Kickdown switch operated, accelerator fully depressed):[1.30...1.70] V**
- **M16/6 (throttle valve actuator)Signal 2(Kickdown switch operated, accelerator fully depressed):[3.30...3.70] V**

Question

- **Are the actual values o.k.? Yes**

The actual values are okay. ** End of Test **
No
At least one of the relevant actual values is not okay.
Possible cause and remedy

- **Test internal resistance of component M16/6 (throttle valve actuator).**
- **Test voltage supply of component M16/6 (throttle valve actuator).**

**** End of Test ****

2 Test Component M16/6m1 (Actuator Motor) by Actuation.

Test requirement

- **The engine is running.**

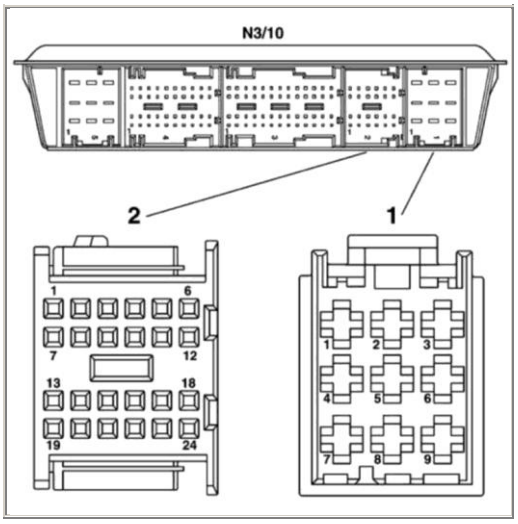
Note

- **If the throttle valve angle is < 1,1° DK, there is unmetered air present.**

Note: Component M4/3 (engine/AC electric suction fan) runs with an on/off ratio of 50 % during the actuations for safety reasons.

Note! Communication with ECU required.

3 Test Internal Resistance of Component M16/6m1 (Actuator Motor).



Test sequence

- **Switch off ignition.**
- **Unplug the socket 1 at component N3/10 (ME-SFI control module).**
- **(N3/10) 1.6 <--> 1.3 (N3/10)**

Specified value

- **Resistor[1...10] ohms**

Question

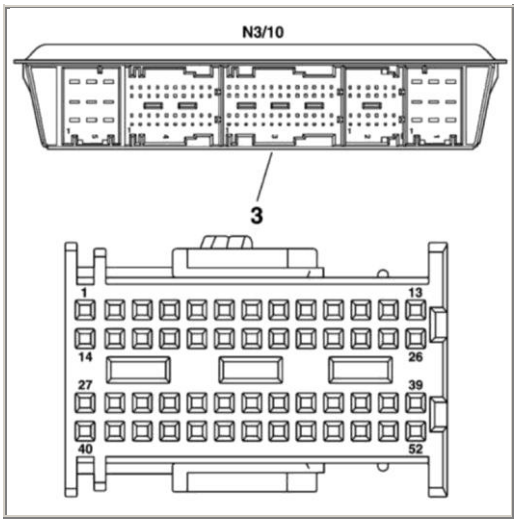
- **Is the measured value okay? Yes**

The measured value is o.k. ** End of Test **
No
The measured value is not o.k.
Possible cause and remedy

- **Wiring between N3/10 (ME-SFI control module) and M16/6m1 (Actuator motor)**
- **M16/6m1 (Actuator motor)**

**** End of Test ****

4 **Test Internal Resistance of Component M16/6 (Throttle Valve Actuator).**



Test requirements

- **The throttle flap of component M16/6 (throttle valve actuator) should operate freely and must not stick or rub.**
- **At least one of the relevant actual values is not okay.**

Test sequence

- **Switch off ignition.**
- **Remove air scoop at component M16/6 (throttle valve actuator).**
- **Unplug the socket 3 at component N3/10 (ME-SFI control module).**

M16/6r3 (Actual value potentiometer (sliding contact 1))

- **(N3/10) 3.21 <--> 3.22 (N3/10)**
- **Slowly operate throttle flap by hand up to full load.**

Specified values

- **Idle Speed [ca. 1380] ohms**
- **Full load[ca. 480] ohms**

M16/6r4 (Actual value potentiometer (sliding contact 2))

- **(N3/10) 3.20 <--> 3.22 (N3/10)**
- **Slowly operate throttle flap by hand up to full load.**

Specified values

- **Idle Speed [ca. 650] ohms**
- **Full load[ca. 1490] ohms**

Question

- **Are the measured values okay? Yes**

The measured values are o.k.
Further possible causes of fault

- **Test voltage supply of the potentiometers of component M16/6 (throttle valve actuator).**

No
The measured values are not o.k.
Possible cause and remedy

- **Leads to component M16/6 (throttle valve actuator)**
- **M16/6 (throttle valve actuator)**

**** End of Test ****

5 **Test Voltage Supply of the Potentiometers of Component M16/6 (Throttle Valve Actuator).**

Test requirement

- **At least one of the relevant actual values is not okay.**

Test sequence

- **Switch off ignition.**
- **Unplug the socket 3 at component N3/10 (ME-SFI control module).**
- **Connect adapter cable no. 210 589 05 63 at component N3/10 (ME-SFI control module).**
- **(N3/10) 3.19 <--> 3.22 (N3/10)**
- **Switch on ignition.**

Specified value

- **Voltage[4.75...5.25] V**

Question

- **Is the measured value okay? Yes**

The measured value is o.k.
Possible cause and remedy

- **Inspect cables from component M16/6 (throttle valve actuator) to component N3/10 (ME-SFI control module).**

No
The measured value is not o.k.
Possible cause and remedy

- **N3/10 (ME-SFI control module)**

**** End of Test ****