



Procedure for the verification of correct operation of fuel level sensor

Multistrada 1200 MY 2010-2014 (all versions)
Scrambler 800 MY 2019 and later (all versions)
Electronic Service Bulletin SRV-ESB-20-004

Date: November 3, 2020
To: Dealer Principal, General Manager, Service Manager, North American Dealer Network
From: Richard Kenton, Technical Director
Eric Bradley, Technical Training and Publications Manager

This Electronic Service Bulletin replaces and cancels the bulletin SRV-ESB-17-001 published on 17/01/2017.

Dear Dealers,

Due to continuous product quality testing, and analysis of field reports, a new generation level sensor has been developed.

Due to the higher reliability of the new component, we have developed the following procedure to avoid unnecessary replacement of the fuel level sensor in case the end Customer would report an incorrect indication of the fuel level displayed on the instrument panel. After the verification, if the component needs replacement, a YouTech request must be completed including the attached the technical sheet for the request of fuel level sensor replacement (SRV-ESB-17-001 ENGLISH_Annex.pdf).



NOTE

This document describes the procedures to be performed to check the correct operation of the fuel level sensor for the following models ONLY:

- Scrambler 800 Model Year 2019 and following MYs (all model versions)
- Multistrada 1200 Model Year 2010-2014 (all model versions)

For all the other Ducati models featuring the fuel level sensor, the test present inside the DDS 2.0 diagnosis instrument under section "Settings" of the BBS control unit "FUEL LEVEL PROBE TEST" must be carried out.



NOTE

After any operation performed on the motorcycle involving the fuel tank (e.g. replacement of fuel pump assembly, fuel level sensor, etc) it is necessary to reset the fuel level sensor ("Settings" section of the BBS control unit self-diagnosis) prior to delivering the motorcycle to the customer. Perform the FUEL LEVEL VALUE RESET, from the BBS control unit - settings (where available).



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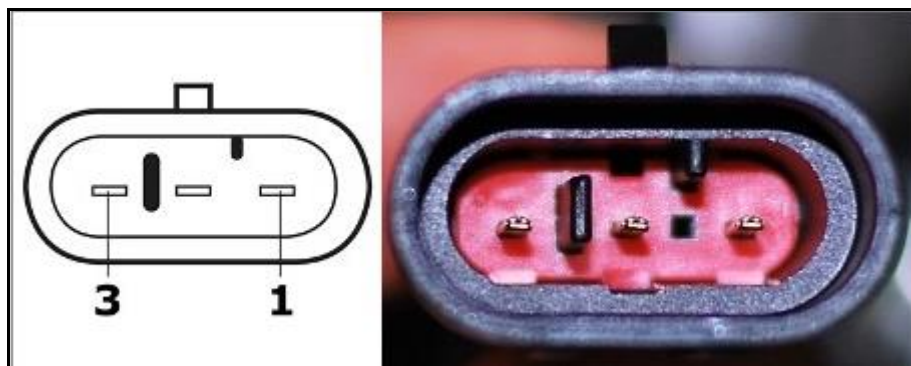
Scrambler 800 MY 2019 and later (all versions)

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Scrambler 800 Model Year 2019 and later

Starting from Model Year 2019, the Scrambler 800 family is equipped with the BOSCH fuel level sensor.

To check the correct operation of the fuel level sensor, completely empty the fuel tank and fill it fully while checking the sensor's resistance values first with an empty tank and then with a full tank:



| Empty tank resistance [Ω] (lowest float position) | Full tank resistance [Ω] (highest position) |
|---|---|
| 320 $\Omega \pm 3.5$ | 20 $\Omega \pm 2.5$ |

NOTE

After any operation performed on the motorcycle involving the fuel tank (e.g. replacement of fuel pump assembly, fuel level sensor, etc) is necessary to reset the BOSCH fuel level sensor ("Settings" section of the BBS control unit self-diagnosis) prior to delivering the motorcycle to the customer.



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Multistrada 1200 Model Year 2010-2014

This objective method is based on the measurement of the resistance between the two PINs of the fuel level sensor connector (component side wiring). This measurement corresponds to the position of the inner float of the sensor.

The method develops in 4 different STEPS that must be carried out in sequence. Thoroughly follow the indications of each step.

- This test can be carried out regardless of the fuel quantity in the tank (unless completely full at workshop admittance)
- Position the bike on the rear paddock stand or on the central stand, if available
- With a multimeter set to resistance (ohm – Ω), measure the resistance between the two PINs of the fuel level sensor connector (component side wiring). The values detected must be compared with the values indicated in the tables of each verification step



Refer to the measurement unit shown on the multimeter display:

| | |
|--------------|---------------|
| 1 Ω | 1 ohm |
| 1 k Ω | 1 000 ohm |
| 1 M Ω | 1 000 000 ohm |



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STEP 1

Check the part number of the fuel level sensor indicated on the adhesive on the sensor power supply wiring and write it in the technical sheet for the request of fuel level sensor replacement under warranty SRV-ESB-17-001 ENGLISH_Annex.pdf.

The part numbers of the fuel level sensors currently managed in the spare part warehouse are:

| Model | Fuel level sensor part number |
|--------------------------|-------------------------------|
| Multistrada 1200 MY10-14 | 59210212F |

STEP 2

Measure the resistance value between the PINs of the fuel level sensor connector. In the table enclosed write the "Resistance at workshop admittance" value.

Does this value fall within the range indicated in the table?

| Model | Comparison values "Resistance at workshop admittance" STEP 2 | |
|--------------------------|---|----------------------------|
| | MINIMUM value [Ω] | MAXIMUM value [Ω] |
| Multistrada 1200 MY10-14 | 240 | 55 000 |

| | | | |
|----------------------------|--|---|---|
| | YES, the value falls within range indicated in the table | | NO, the value does not fall within range indicated in the table |
| Proceed with STEP 3 | | Repeat the measurement by checking the correct contact of the connector PINS and the multimeter settings. | |
| | | If the measured value is still outside the range, it means that there is a problem either in the wiring of the fuel level sensor or in the connector or inside the sensor itself. | |







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| | |
|--|---|
| | Should the fuel level sensor require replacing, complete a YouTech request enclosing pictures of the values detected with the multimeter. |
|--|---|

| STEP 3 | | | |
|---|---|--|---|
| Does the value of "Resistance at workshop admittance" fall within the range indicated in the table? | | | |
| Model | Comparison values "Resistance at workshop admittance" STEP 3 | | |
| | MINIMUM value [Ω] | MAXIMUM value [Ω] | |
| Multistrada 1200 MY10-14 | 240 | 440 | |
|  | YES, the value falls within range indicated in the table |  | NO, the value does not fall within the range indicated in the table |
| <p style="text-align: center;"><u>Add 8 liters of fuel in the tank.</u></p> <p>Measure again the resistance between the PINs of the fuel level sensor connector (component side wiring). In the table enclosed write the value as "Resistance with 8 liters".</p> | | Proceed with STEP 4 | |
| Is the "Resistance with 8 liters" value the same as the value of "Resistance at workshop admittance"? | | | |
|  | YES, the value is the same |  | NO, the values are different |
| It is necessary to replace the fuel level sensor. Complete a YouTech request enclosing pictures of the values detected with the multimeter. | | The fuel level sensor works correctly. <u>It is NOT necessary to replace the component.</u> | |



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| STEP 4 | | | |
|--|---|--|---|
| Model | | Comparison values | |
| | | "Resistance at workshop admittance" STEP 4 [Ω] | |
| Multistrada 1200 MY10-14 | | > 440 | |
| Does the "Resistance at workshop admittance" value comply with the values indicated in the table? | | | |
| | YES, the value detected complies with the reference value listed in the table | | NO, the value detected does NOT comply with the reference value listed in the table |
| <p><u>Remove all fuel present in the tank.</u> Do NOT remove tank from motorcycle during this operation in order to avoid releasing the float inside the sensor.</p> | | Go back to STEP 2 | |
| Measure the resistance again. In the table enclosed write the value as "Resistance after emptying". Does this value fall within the range indicated in the table? | | | |
| Model | | Resistance after emptying [Ω] | |
| Multistrada 1200 MY10-14 | | 400 \pm 40 | |
| | YES, the value falls within the range indicated in the table | | NO, the value does NOT fall within the range indicated in the table |
| <p>The fuel level sensor works correctly. <u>It is NOT necessary to replace the component.</u></p> | | <p>It is necessary to replace the fuel level sensor. complete a YouTech request enclosing pictures of the values detected with the multimeter.</p> | |



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Find below a summary table of the resistance values of the fuel level sensor both with empty and full tank:

| Model | Empty tank resistance [Ω] (corresponds to lowest float position) | Full tank resistance [Ω] (corresponds to highest float position) |
|--------------------------|--|--|
| Multistrada 1200 MY10-14 | 400 \pm 40 | 51 000 \pm 4000 |



NOTE

For Multistrada 1200 MY 10-12, if the failed sensor is part no. 59210201F or older, please reference bulletin SVC 13-014 for additional control unit programming requirements. These programming updates must be performed prior to delivering the motorcycle to the customer or the new sensor model will not function properly.

Starting from 18/07/2016 for any fuel level sensor warranty request it will be necessary to deliver to your Service Area Manager the Technical sheet for the request of fuel level sensor replacement under warranty (SRV-ESB-17-001 ENGLISH_Annex.pdf). This will allow us to better identify and analyze the real faults.

This sheet must be filled in every part and enclosed (as a picture of the form filled in by hand or as file in pdf format) to the warranty pre-authorization YouTech request.

Your Service Area Manager will assess the request according to the information specified in it and may request to send the fuel level sensor to the factory to have it analyzed.

Any fuel level sensor replacement performed without a properly filled in YouTech request with enclosed technical sheet for the request of fuel level sensor replacement will be denied reimbursement.



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Technical sheet for the request of fuel level sensor replacement under warranty (SRV-ESB-17-001 ENGLISH_Annex.pdf)

| DUCATI SERVICE | | Allegato dalla SRV-ESB-17-001 ITA | |
|--|---|---|---|
| Scheda tecnica di richiesta sostituzione sonda livello carburante in garanzia | | | |
| Modello Moto: | | Fill in the fields with the bike data | |
| Model Year: | | | |
| Numero Telaio: | | | |
| Analisi sonda livello carburante e operazioni da eseguire | | | |
| FASE 1 | Codice della sonda livello carburante installata sulla moto | Codice | Fill in the fields relevant to the measurements carried out during test |
| FASE 2 | Annotare il valore "Resistenza ingresso in officina" | Valore misurato [Ω] [kΩ] [mΩ] | |
| FASE 3 | Annotare il valore "Resistenza 3 litri" | Valore misurato [Ω] [kΩ] [mΩ] | |
| FASE 4 | Annotare il valore "Resistenza dopo svuotamento" | Valore misurato [Ω] [kΩ] [mΩ] | |
| Ducati Motor Holding spa www.ducati.com | | Via Cavallotti Ducati, 3 40132 Bologna, Italia Tel. +39 051 6419111 Fax +39 051 6413671-405802 | |
| | | Società a Sotto Unico Società soggetta all'attività di Direzione e Coordinamento di AIEVI AG j/h | |



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Warranty reimbursement rules

Reimbursement under warranty will be possible according to the rules explained below.

Vehicle is covered by warranty: it is possible to ask for both labor and component reimbursement – Warranty request type **NORM**

Vehicle is not covered by warranty: submit a YouTech with the required Goodwill consideration information listed below, and request reimbursement of the component only (labor excluded) – Warranty request type **GWIL**

- Ensure the issue is not the result of misuse, damage, or modification
- A Youtech is submitted with the following documentation:
 - Description of issue and, if applicable, current and previous attempts to remedy
 - Complete service history including all customer paid service, repairs, and accessories, and supplemental warranty and service plans
 - Sales documentation for current owner
 - Technical Sheet **SRV-ESB-17-001 ENGLISH_Annex.pdf**
 - If approved- a scan of final repair order with customer signature on Ducati provided disclaimer

For the operations necessary to fill in the **Technical sheet for the request of fuel level sensor replacement** you will be reimbursed for a labor time of [REDACTED] you can request a warranty reimbursement by providing the information below:

| | |
|----------------|---------------|
| Operation Code | 3 – 999 – 059 |
|----------------|---------------|

Components replaced under warranty must NOT be scrapped and must be kept for at least 90 days as it could be necessary to return the replaced sensors to DMH for further analysis. Should this be the case you will be contacted by your reference Service Area Manager.

For questions about this Electronic Service Bulletin,
please contact your Service Area Manager.