



Fuel Level Sensor Verification Procedure

Models: Multistrada 1200 Model Year 15-17 (all model and country versions)
Multistrada 1200 Model Year 10-14 (all model and country versions)
Multistrada 1200 Enduro Model Year 16-17 (all country versions)
Diavel Model Year 15-17 (all model and country versions)
XDiavel Model Year 16-17 (all model and country versions)

Electronic Service Bulletin SRV-ESB-16-003

Date: Monday, May 31, 2016
To: Dealer Principal, General Manager, Service Manager, and Service Technician
From: Richard Kenton, Technical Director; Jonathan LaForte, Technical Manager

Dear Ducati Dealer,

As you may already know, the quality tests that we constantly perform on our products, combined with the analysis of your feedback on motorcycles in the field, have helped develop a new generation fuel level sensor.

As a result of 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 fuel level indication being displayed on the instrument panel.

After the verification, if the component needs to be replaced, it will be necessary to fill a YouTech Assistance Request and to attach to it the technical datasheet (SRV-ESB-16-003 Attachment.pdf), in order to receive authorization for the repair.



NOTE

Requests for fuel level sensor replacements that lack proper YouTech reporting and supporting documentation will be sent back for correction. To assure the best customer service, please ensure that all required data are supplied in the initial request.

Verification procedure

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 a unique position of the inner float of the sensor.

The method involves 4 different STEPS that must be carried out in the proper, indicated sequence. Thoroughly follow the instructions of each step.

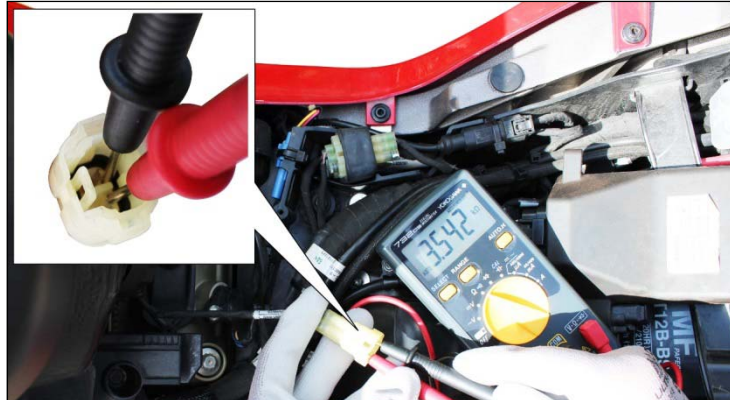
- This test can be carried out regardless of the fuel quantity in the tank;
- Position the motorcycle on the rear paddock stand or on the central stand, if available.
- By means of a multimeter set to ohm, measure the resistance between the two PINs of the fuel level sensor connector (component side wiring). The values detected must be compared with the values indicated in the tables of each verification step.



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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

STEP 1

Check the part number of the fuel level sensor indicated on the label on the sensor wiring pigtail, and record it in the technical data sheet for the request of fuel level sensor replacement under warranty – SRV-ESB-16-003 ING_Annex.pdf.

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

<i>Model</i>	<i>Fuel level sensor part number</i>
Multistrada 1200 MY10-17	59210211D
Multistrada 1200 Enduro MY16-17	59210221C
Diavel MY15-17	59210221C
XDiavel MY16-17	59210242B



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STEP 2

**Measure the resistance value between the PINS of the fuel level sensor connector.
 Write the "Resistance at workshop admittance" value in the appropriate field of the technical data sheet.**

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 MY10-17	240	55 000
Multistrada 1200 Enduro MY16-17	140	55 000
Diavel MY15-17	140	55 000
XDiavel MY16-17	500	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 checking the correct contact of connector PINs and 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.	
		Should the fuel level sensor require replacing, fill in a YouTech request enclosing pictures of the values detected with the multimeter.	



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<i>STEP 3</i>			
<i>Does the value of "Resistance at workshop admittance" fall within the range indicated in the table?</i>			
<i>Model</i>	<i>Comparison values</i>		
	<i>"Resistance at workshop admittance" STEP 3</i>		
	<i>MINIMUM value [Ω]</i>	<i>MAXIMUM value [Ω]</i>	
Multistrada 1200 MY10-17	240	440	
Multistrada 1200 Enduro MY16-17	47,000	55,000	
Diavel MY15-17	140	255	
XDiavel MY16-17	47,000	55,000	
	YES, the value falls within range indicated in the table		
<p><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).</p> <p>Write the "Resistance with 8 liters" value in the appropriate field of the technical data sheet.</p>			<p>Proceed with STEP 4</p>
<p><i>Is the "Resistance with 8 liters" value different from the value of "Resistance at workshop admittance"?</i></p>			
	YES, the values are the different		
<p>The fuel level sensor works correctly.</p> <p><u>It is NOT necessary to replace the component.</u></p>		<p>It is necessary to replace the fuel level sensor. Fill in a YouTech request enclosing pictures of the values detected with the multimeter.</p>	



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STEP 4			
Does the "Resistance at workshop admittance" value comply with the values indicated in the table?			
<i>Model</i>	<i>Comparison values</i> <i>"Resistance at workshop admittance" STEP 4 [Ω]</i>		
Multistrada 1200 MY10-17	> 440		
Multistrada 1200 Enduro MY16-17	< 47 000		
Diavel MY15-17	> 255		
XDiavel MY16-17	< 47 000		
	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 the tank of the motorcycle during this operation to avoid releasing the inner float of the sensor.</p>		<p>Go back to STEP 2</p>	
<p>Measure the resistance again. In the appropriate field of the technical data sheet, write the "Resistance after emptying" value.</p> <p>Does this value fall within the range indicated in the table?</p>			
<i>Model</i>	<i>Resistance after emptying [Ω]</i>		
Multistrada 1200 MY10-17	400 ± 40		
Multistrada 1200 Enduro MY16-17	51 000 ± 4 000		
Diavel MY15-17	240 ± 15		
XDiavel MY16-17	51 000 ± 4 000		
	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. Fill in a YouTech request enclosing pictures of the values detected with the multimeter.</p>	



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At the end of the diagnosis procedure, carry out the "Fuel level reset" procedure from the "Settings" section of the self-diagnosis of the BBS, if possible. This adjustment is available today only for the following models:

- XDiavel Model Year 2016 and 2017;
- Multistrada 1200 Enduro Model Year 2016 and 2017.

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

<i>Model</i>	<i>Empty tank resistance [Ω] (it corresponds to the all down float position)</i>	<i>Full tank resistance [Ω] (it corresponds to the all up float position)</i>
Multistrada 1200 MY10-17	400 ± 40	51 000 ± 4000
Multistrada 1200 Enduro MY16-17	51 000 ± 4 000	240 ± 15
Diavel MY15-17	240 ± 15	51 000 ± 4 000
XDiavel MY16-17	51 000 ± 4 000	800 ± 50

NOTE



At the lower ranges of the Multistrada MY10-17 and Diavel MY15-17 fuel level sensor the resistance is not linear, in regards to float position. As such, it is possible for the measured resistance to be outside the values listed in the above table. It is critical, therefore, to exactly follow the instructions provided, to avoid erroneous results.

Beginning 7/19/2016 for any fuel level sensor warranty request it will be necessary to deliver to your Service Area Manager the technical data sheet for the request of fuel level sensor replacement under warranty (SRV-ESB-16-003 Attachment.pdf). This will allow us to better identify and analyze the real faults.

This sheet must be filled in every part and attached (in either pdf format, or an image of picture of the form filled in by hand) 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 return of the fuel level sensor to the factory for quality analysis. ***Any fuel level sensor replacement performed without a properly filled in YouTech request with attached technical data sheet for the request of fuel level sensor replacement may be subject to rejection or chargeback of the NDCS claim.***



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Technical data sheet for the request of fuel level sensor replacement under warranty (SRV-ESB-16-003 Attachment.pdf)

The form is titled "Technical sheet for the request of fuel level sensor replacement under warranty". It includes fields for "Bike model:", "Model Year:", and "VIN number:". Below this is a section for "Fuel level sensor analysis and operations to be carried out" with four steps:

STEP	Description	Field
STEP 1	Part number of the fuel level sensor installed on the bike	Part number
STEP 2	Take a note of the value of "Resistance at workshop admittance"	Measured value [Ω]
STEP 3	Take a note of the value of "Resistance with 8 litres"	Measured value [Ω]
STEP 4	Take a note of the value of "Resistance after emptying"	Measured value [Ω]

At the bottom, there is contact information for Ducati Motor Holding spa and a small disclaimer.

Fill in the fields with the motorcycle data

Fill in the fields relevant to the measurements carried out during test

Warranty reimbursement rules

Reimbursement for authorized fuel level sensor replacements will be according to the following rules:

- Motorcycle is covered by warranty: reimbursement will be through the normal warranty channels - **NORM** type of NDCS claim;
- Motorcycle is not covered by warranty: it is necessary to check that the maintenance history of the motorcycle is complete and, if this is the case, ask for a reimbursement of the component only (labor excluded) - **GWIL** type of NDCS claim;



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For the operations performed to fill in the ***Technical data sheet for the request of fuel level sensor replacement*** you will be reimbursed for a labor time of 12 minutes (2UL); you can request a warranty reimbursement by providing the information below:

<i>Operation Code</i>	<i>3 - 999 - 059</i>
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We would like to remind you that the 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 Service Area Manager.

Best regards,

Ducati North America
Service Department