



SIB 66 08 23

2023-04-20

KAFAS04 CAMERA-BASED ASSISTANCE SYSTEM LIMITS

MODEL

E-Series	Model Description	E-Series	Model Description	Affected Option Code
F44	2 Series Gran Coupe	G16	8 Series Gran Coupe	OE 5AV or OE 5AQ or OE 5DF or OE 5AS or OE 5AU
G01	X3 Sports Activity Vehicle ¹	G20	3 Series Sedan	
G02	X4 Sports Activity Coupe ¹	G22	4 Series Coupe	
G05	X5 Sports Activity Vehicle	G23	4 Series Convertible	
G06	X6 Sports Activity Coupe	G26	4 Series Gran Coupe	
G07	X7 Sports Activity Vehicle	G29	Z4 Roadster	
G12	7 Series Sedan ²	G30	5 Series Sedan ³	
G14	8 Series Convertible	G32	640i xDrive Gran Turismo ³	
G15	8 Series Coupe	G42	2 Series Coupe	

Production date ranges

- ¹- From August 1, 2021 onwards.
- ²- From March 1, 2019 onwards.
- ³- From July 1, 2020 onwards.

SITUATION

The camera-based driver assistance systems (KAFAS) provide support for the following systems:

- Lane Departure Warning with active feedback
- Collision warning with city braking function
- Pedestrian/cyclist warning with city braking function
- Road sign detection / Speed Limit Assist
- Lane Change Warning/Assist
- Crossing-traffic Warning
- Distance information
- Active Cruise Control with Stop & Go function
- Steering and Lane Control Assistant
- Emergency Stop Assistant
- Lane Keeping Assistant with active side collision protection
- Evasion Assistant
- Crossing-traffic Warning
- Wrong-way Warning (Wrong-way Assist)

Issues with the various functions of the camera-based driver assistance systems (KAFAS system) can possibly lead to following customer complaints:

- KAFAS camera system deactivates itself, due to system restrictions that are not clear to the customer
- KAFAS camera system cannot be activated due to system restrictions that are not clear to the customer
- Road signs are sporadically not detected

Various Check Control messages and the following fault memory entries may also appear alongside these complaints:

- Fault code – 800ABF - KAFAS camera – Field of vision impaired for a short time

CAUSE

Limitations of camera-based driver assistance systems (KAFAS04).

PROCEDURE

Determine what is the vehicle's current I-level by either using AIR or the ISPA NEXT/Aftersales Workplace (AWP) applications.

If KAFAS fault memories are available, they must be diagnosed with ISTA first.

Marginal conditions that may be linked to the complaint situation must be clarified and, if applicable, stopped as follows: **Visual inspections below-**

- Is the windscreen in the camera area clean from the outside and not covered (miscellaneous soiling, streaks, road salt, stickers, etc.)?
 - Yes
 - Clean the windscreen, check wiper quality (smearing especially in the camera field of view); recommend that the customer renew the wiper blades, if necessary.
 - No
 - Continue with steps below.
- Check the KAFAS camera installation and check that the camera holder is correctly installed. Is the KAFAS camera correctly locked into the holder?
- Is there any wiring in the field of view of the camera (e.g. driving light sensor cable)?
- Is the camera holder glued straight onto the window glass?
- Is the camera pointing straight ahead (visual inspection from the outside)?

Note: If a fault was detected on the camera holder (not glued correctly), the windscreen needs to be replaced, according to the repair instructions.

Ask the customer clarifying questions prior to diagnosis.

- Was visibility restricted at the time of the complaint due to heavy rain, snowfall, icing, fog, low or dazzling sun (strong back light), tunnel entries / exits (rapid change from bright / dark)?
- Does the customer encounter such weather phenomena or special conditions (driving every morning looking into the sun low down on the horizon, regular dew/frost on the windscreen, regular thick fog, ...)? All these environmental conditions can lead to reduced visibility and therefore to functional restrictions for safety reasons.
- Were vehicles with a non-typical rear end (whether passenger car / truck) not recognized, for example trucks with tree trunks, heavy loads, passenger cars with a loaded trailer?
- Did a vehicle driving ahead suddenly change lanes?
- Was another obstacle too close to the edge of the road (pedestrians, cyclists, motorcyclists, side road traffic) or was a parked vehicle protruding into the lane?
- Was the vehicle driving ahead a two-wheeled vehicle?

If the above-mentioned points yielded no result, then carry out the diagnosis with ISTA and work through the corresponding test module if necessary.

If no faults could be identified and no entries have been made in the fault memory, inform the customer about the limitations of the camera based KAFAS system (see also operating instructions).

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Various limitations of the camera-based system are described in more detail in the Owner's Manual (electronic version in the vehicle, or the actual printed manual) in the "Driver assistance systems" section.

Important: Proceed as follows for vehicles with chassis conversions and performance problems with the driver assistance system (for example, false warnings):

- Read out the I level as noted above
- Is the I level is greater (higher) than or equal to ...19-07-500?
 - Yes
 - Do not program the vehicle. Diagnosis with ISTA is needed.
 - No
 - Program and encode the vehicle to the current I-level.

Note: This programming activates a height detector in the camera-based driver assistance system. If there is (raised or lowered suspension) greater than 6% than the value coded in the camera, the Check Control message (CCM-ID 311) "High-beam Assistant" is created.

In this case the fault memory 800AC8 "Permanent calibration error" is also entered.

- Important: After programming, the KAFAS camera can take up to approximately 65 miles to fully adapt
- Reassess the vehicle

If during the test drive the Check Control - message (CCM-1D 311) "High-beam Assistant" is displayed and "Permanent calibration error" is displayed during the fault memory search with ISTA 800AC8, the corresponding test module must be worked through.

Important additional points.

- **The system does not absolve the driver from taking responsibility for speed, distance and adapting their driving style to the traffic conditions and ambient conditions ("Personal responsibility")**
- The camera cannot see the traffic ahead in these situations and thereby loses the reference to the vehicle ahead and switches off for safety reasons. A parts replacement does not provide a solution in this case.
- After replacing the windscreen, calibration must be started manually using the diagnosis system.
 - Start calibration via the diagnosis system and inform the customer that the calibration may take some time along with possible limitations on individual functions as a result.
- Is the tire size within the range permitted by BMW for the vehicle? Non-approved tires can lead to anomalous system behavior, because of which the KAFAS camera switches off for safety reasons.
 - If changing tire sizes, you must calibrate KAFAS using ISTA.
- Chassis modifications (raised or lowered suspension) can lead to deviating system behavior and customer complaints. In vehicles with chassis modifications, the KAFAS camera can switch off for safety reasons after a chassis modification and display various Check Control messages.

CLAIM INFORMATION

This Service Information Bulletin provides technical, diagnosis, and repair-related information.

System function issues caused by outside influences, soiling, obstructions, damage, improper prior repairs, mis-matched/incorrect and/or aftermarket equipment as noted above, are not covered under the BMW limited warranties.

Eligible and Covered Work/Repairs

Repairs that address a verified defect in materials or workmanship is covered under the terms of the BMW New Vehicle Limited Warranty for Passenger Cars and Light Trucks.

To submit a claim, please follow the established and applicable warranty policy and procedures (Labor/Part/Sublet) that apply to the repair being performed.

Refer to AIR for the corresponding Defect Code, flat rate labor operations (including the diagnosis that applies*) and the flat rate unit (FRU) allowances.

Only one Main labor operation code can be claimed per repair visit.

Vehicle Programming and Encoding (When applicable)

During this workshop visit, the affected vehicle may also show one or more programming and encoding Technical Campaign repairs open, the programming and encoding procedure may only be invoiced one time.

Select one of these open Technical Campaigns to perform and submit for updating the vehicle to the required I-level or higher.

Please be sure to also perform any additional before and/or after work (including attaching labels) as required by the open campaigns on the vehicle. Close any other open programming and encoding Campaign repairs as outlined in the corresponding Service Information Bulletin.

Only when the above does not apply, the BMW software solution is then:

Covered under the terms of the BMW New Vehicle Limited Warranty for Passenger Cars and Light Trucks, or the BMW Certified Pre-Owned Program as described below.

Defect Code:	6138160200	KAFAS control unit (camera-based driver assist systems) Software error / internal device fault
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Refer to AIR for the corresponding flat rate unit (FRU) allowances.

Labor Operation	Description	Labor Allowance
00 00 006	Carrying out vehicle test (Main work)	Refer to AIR
Or:		
00 00 556	Carrying out vehicle test (Plus work)	Refer to AIR
And:		
61 21 528	Supporting voltage of the vehicle electrical system / recharging vehicle battery	Refer to AIR
And, as needed:		
61 00 006*	Carrying out vehicle diagnosis, ABL (Work time)	WT
Or:		
00 58 500*	Diagnosis Worktime Flat Rate	2 FRU
And:		
61 00 730	Program/encode control unit(s), includes deleting the fault memory	Refer to AIR

If you are using a Main labor code for another repair, use the Plus code labor operation 00 00 556 instead of 00 00 006, or exclude (including 61 21 528) when the Vehicle Test is included in another repair.

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Work time labor operation codes 61 00 006 and 00 58 500 are not considered Main labor operations.

Vehicle Programming and Encoding – Additional Work (RO and Claim Comments Required)

This procedure automatically reprograms and encodes any vehicle control modules that do not have the latest software I-level.

If one or more control modules fail during the reprogramming procedure, claim the required consequential repair work procedures to address this issue (including performing the IRAP Control Unit Recovery first as required, refer to the SIB in AIR) under the Defect Code in this bulletin with the labor operations in AIR that apply.

Please explain the additional work procedures that were performed (The why and the what) on the repair order and in the claim comments.

For covered repairs that address control module failures that occurred prior to performing this reprogramming procedure, claim this work with the Defect Code and labor operations (including the diagnosis that applies*) in AIR that apply.

*Based on which one applies to your center, please refer to **SI B01 01 20** or **B01 07 20** for the applicable procedure for documenting, claiming, and explaining, on the RO and in the claim comments, your diagnosis work time (WT), job/repair work time (WT), and the vehicle repairs your center performed, unless otherwise required by State law.

FEEDBACK REGARDING THIS BULLETIN

Technical Feedback	To submit feedback for the technical topic of this bulletin: Submit your feedback in the rating box at the top of this bulletin
Warranty Feedback	To submit feedback for the CLAIMS section of this bulletin: Submit an IDS ticket to the Warranty Department, or use the chat available in the Warranty Documentation Portal

