

Technical training.

Product information.

G30 Climate Control



BMW Service

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Technical Training

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General information

Symbols used

The following symbol is used in this document to facilitate better comprehension or to draw attention to very important information:



Contains important safety information and information that needs to be observed strictly in order to guarantee the smooth operation of the system.

Information status and national-market versions

BMW Group vehicles meet the requirements of the highest safety and quality standards. Changes in requirements for environmental protection, customer benefits and design render necessary continuous development of systems and components. Consequently, there may be discrepancies between the contents of this document and the vehicles available in the training course.

This document basically relates to the European version of left hand drive vehicles. Some operating elements or components are arranged differently in right-hand drive vehicles than shown in the graphics in this document. Further differences may arise as the result of the equipment specification in specific markets or countries.

Additional sources of information

Further information on the individual topics can be found in the following:

- Owner's Handbook
- Integrated Service Technical Application.

Contact: conceptinfo@bmw.de

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The information contained in this document forms an integral part of the BMW Group Technical Qualification and is intended for the trainer and participants in the seminar. Refer to the latest relevant information systems of the BMW Group for any changes/additions to the technical data.

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G30 Climate Control

1. Introduction

1.1. General information

The new BMW 5 Series with the development code G30 will be equipped with a further developed and optimized heating and air conditioning system. The heating and air-conditioning system is similar to the BMW G12. The G30 uses the new R1234yf refrigerant.

A brushless blower motor is installed in the heating and air-conditioning housing which provides the supply of fresh air to the vehicle interior via the fresh air microfilters. The microfilters can be replaced from an access point from the footwell area under the dashboard on the passenger's side.

The IHKA control unit is separate from the IHKA control panel and is located behind the dashboard on the passenger side towards the center of the vehicle.



IHKA control module location

1.2. Overview

Currently only one version of climate control is available for the G30.

- 3/2-zone IHKA

In terms of technology, the G30's climate control system is based on the G12 system. For more detailed information on the topics listed below, please refer to the Training Reference Manual "ST1501 G12 Complete Vehicle" Climate Control section.

Topic	"ST1501 G12 Complete Vehicle"
Refrigerant line (With, inner heat exchanger) (IWT)	G12 Climate Control
Coolant-cooled air conditioning condenser	G12 Climate Control
Refrigerant circuit	G12 Climate Control
Cooling system	G12 Climate Control
Evaporator	G12 Climate Control

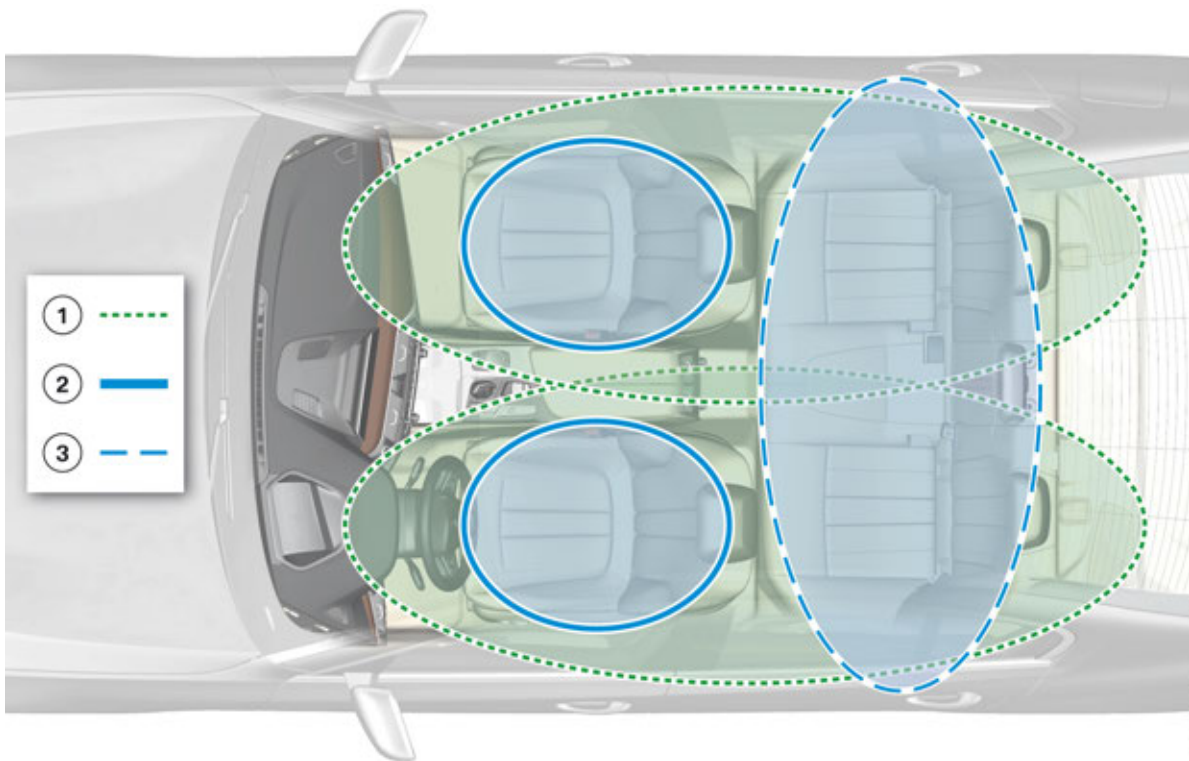
G30 Climate Control

2. System Overview

2.1. IHKA, 3/2-zone

The climate control system is divided into two zones. The first digit “3” represents the individually adjustable temperature settings, the second digit “2” represents the zones in which the amount of air can be individually controlled.

In the G30, a 3/2-zone IHKA system is installed as standard equipment. Three different temperature zones can be set by the driver/front passenger and in the rear passenger compartment. The amount of air can only be regulated from the front control panel by the driver or front passenger. An automatic air recirculation control sensor is installed for automatic recirculated air flap control. The solar sensor is mounted on the windshield underneath the trim of the mirror base. Under strong sunlight conditions, it controls the temperature, amount of air and air distribution accordingly for the air conditioning. This is so the selected temperature for the vehicles interior is properly maintained.



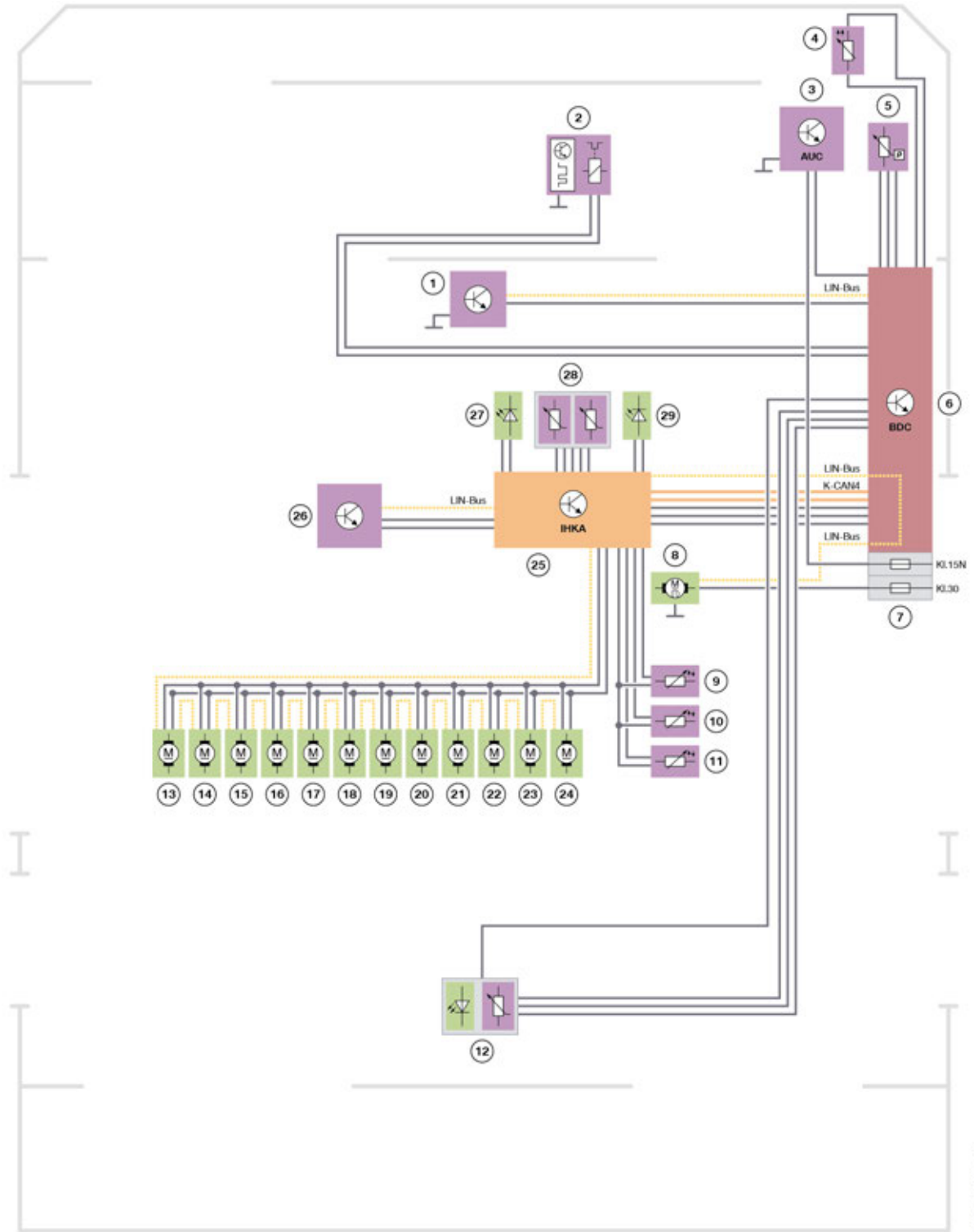
3/2-zone IHKA – overview

Index	Explanation
1	Air flow control for driver/front passenger
2	Temperature control for driver/front passenger
3	Temperature control for the rear passenger compartment via stratification

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2. System Overview

2.1.1. Wiring diagram



G30 3/2-zone IHKA wiring diagram

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2. System Overview

Index	Explanation
1	Rain-light-solar-condensation sensor
2	Air conditioning compressor
3	Automatic air recirculation control sensor
4	Outside temperature sensor
5	Refrigerant pressure sensor
6	Body Domain Controller (BDC)
7	Fuses for Body Domain Controller (BDC)
8	Blower motor
9	Temperature sensor for evaporator
10	Temperature sensor, footwell, front right
11	Temperature sensor, footwell, front left
12	Stratification controller for rear passenger compartment with illumination
13	Stepper motor for driver footwell
14	Stepper motor for driver/front passenger stratification
15	Stepper motor for ventilation, rear passenger compartment
16	Stepper motor for front passenger footwell
17	Stepper motor, defrost
18	Stepper motor for front passenger ventilation
19	Stepper motor for stratification, front passenger
20	Stepper motor for ventilation, driver
21	Stepper motor for air recirculation function
22	Stepper motor for front blending flap, left
23	Stepper motor for front blending flap, right
24	Stepper motor for fresh air
25	Control unit, integrated automatic heating/air conditioning (IHKA)
26	Air conditioning control panel for driver/front passenger
27	Lighting for ventilation outlet, driver
28	Temperature sensor for center vent, driver/front passenger
29	Lighting for ventilation outlet, front passenger

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2. System Overview

2.1.2. Air conditioning control panel

The 3/2-zone IHKA uses the familiar operating concept from the G12. It provides the driver and front passenger with individual and separate left/right temperature control, blower control and individual selection of an automatic program. All functions on this control panel are controlled using buttons. Depending on the equipment installed, the amount of air and air distribution for the driver/front passenger, seat heating and active seat ventilation can be controlled using the IHKA control panel.

On the 3/2-zone IHKA, the current settings of the driver for temperature, amount of air and air distribution can be transferred to the passenger's side by pressing the SYNC button on the right side of the IHKA control panel. The IHKA menu is opened in the Central Information Display (CID) by the menu button in the center of the IHKA control panel. The stratification for driver/front passenger can be adjusted separately in this menu along with setting the activation times for the parked car ventilation. More information on the adjustment of the air stratification can be found in next section "Stratification".



G30 3/2-zone air conditioning control panel

2.1.3. Rear passenger compartment temperature control

The temperature in the rear passenger compartment is adjusted by a conventional stratification wheel. The amount of air for the rear passenger compartment is supplied by the main blower motor installed in the passenger footwell under the dashboard. The air volume can only be adjusted by the front control panel by the driver or front passenger. The air flow can be turned off by the rear passengers by rotating the air control wheels on the rear panel.

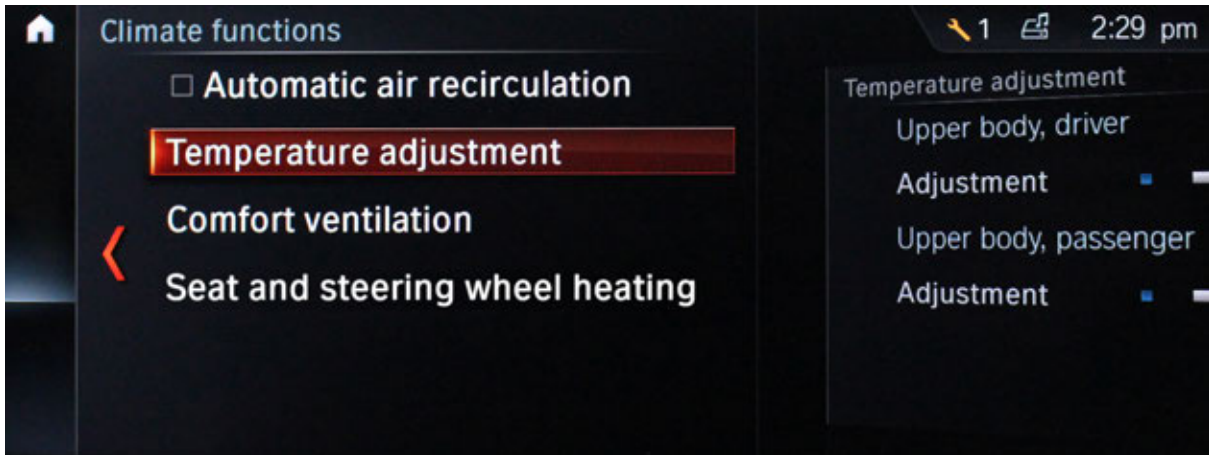


Control panel for the rear passenger compartment

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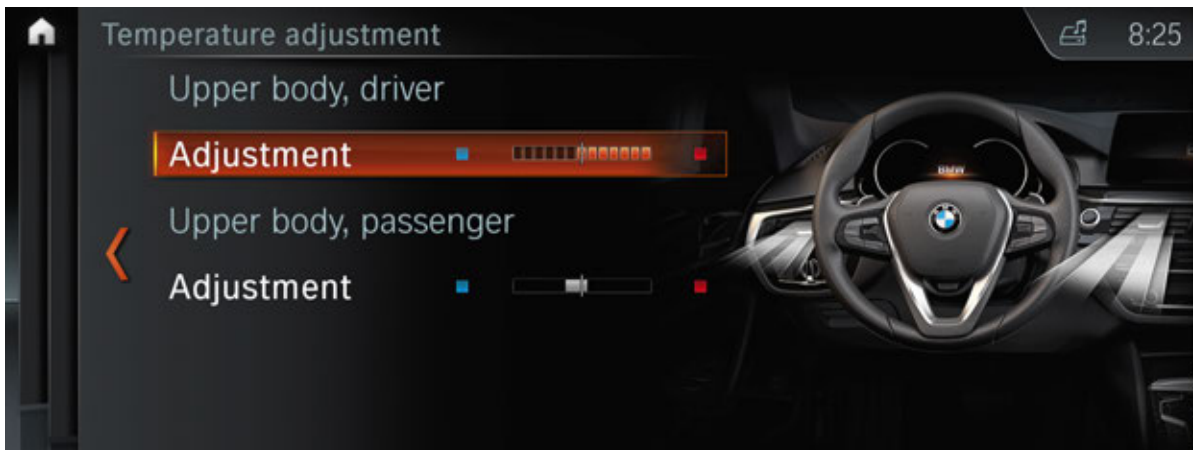
3. Stratification

On the G30 the stratification for the driver/front passenger is not adjusted in the usual manner by the knurled wheels on the front dash panel. Instead, there is a menu button located in the center of the IHKA control panel. Pressing this button opens the IHKA menu in the CID. Once the menu is displayed in the CID, you must select the temperature adjustment button as shown below.



G30 Climate control functions menu

It is now possible to select the stratified air between driver and front passenger. Once the driver or passenger is selected, the stratification can be adjusted by turning the controller. The selected setting is saved by pressing the controller.



G30 IHKA stratification menu for driver/front passenger



Bayerische Motorenwerke Aktiengesellschaft
Händlerqualifizierung und Training
Röntgenstraße 7
85716 Unterschleißheim, Germany