

# Original BMW Accessories. Installation Instructions.



## Front Park Distance Control (PDC) Retrofit

**BMW 1 Series 5-door (F 20)**

**BMW 1 Series 3-door (F 21)**

**BMW 3 Series Saloon (F 30)**

**BMW 3 Series Touring (F 31)**

**These installation instructions apply only to cars fitted with SA 507 (rear Park Distance Control).**

### Retrofit kit number

66 20 2 338 070      Front Park Distance Control Retrofit Kit

### Installation time

The installation time is **approx. 2.0 hours**. This may vary depending on the condition of the car and the equipment in it.

The installation time shown does not include any time spent on programming/coding.

The calculation of the total costs for the programming time must be factored into the calculation of retrofitting costs (no charges may be made through the warranty).

### Important information

These installation instructions are primarily designed for use within the BMW dealership organisation and by authorised BMW service companies.

On cars with SA 715 (M Aerodynamics package) or PA 337 (M Sports package), the two central PDC holders must be painted in the same colour as the car.

In any event, the target group for these installation instructions is specialist personnel trained on BMW cars with the appropriate specialist knowledge.

All work must be completed using the latest BMW repair manuals, wiring diagrams, servicing manuals and work instructions, in a rational order, using the prescribed tools (special tools) and observing current health and safety regulations.

**If you experience installation or function problems, restrict troubleshooting to approx. 0.5 hours for mechanical work and 1.0 hour for electrical work.**

To avoid unnecessary extra work and/or costs, send an inquiry straight away to the technical parts support team via the Aftersales Assistance Portal (ASAP).

Quote the following information:

- Chassis number,
- retrofit kit part number,
- a detailed description of the problem,
- any work already carried out.

Do not archive the hard copy of these installation instructions since daily updates are provided via ASAP!

## Pictograms



Denotes instructions that draw your attention to dangers.



Denotes instructions that draw your attention to special features.

◀ Denotes the end of the instruction or warning text.

## Installation information

Ensure that the cables and/or lines are not kinked or damaged as you install them in the car. Costs arising from this will not be reimbursed by BMW AG.

Additional cables/lines that you install must be secured with cable ties.

If the specified PIN chambers are occupied, bridges, double crimps or twin-lead terminals must be used.

All pictures show LHD cars; proceed accordingly on RHD cars.

After the installation work, the retrofit must be programmed/coded via the – **Conversions** – path.

The PDC sensors must not be painted over.

## Ordering instructions

PDC sensors **D** are not included in the retrofit kit and must be ordered separately in the car colour (see EPC for part number and further details).

PDC sensor holder set **E** is not included in the retrofit kit and must be ordered separately on a car equipment-specific basis (see EPC for part number and further details).

Centre console control unit **G** is not included in the retrofit kit and must be ordered separately (see EPC for part number and further details).

## List of special equipment

The following special equipment must be taken into consideration when installing the retrofit kit:

**SA 337** M Sport package  
**SA 507** Rear Park Distance Control  
**SA 8TF** Active pedestrian protection

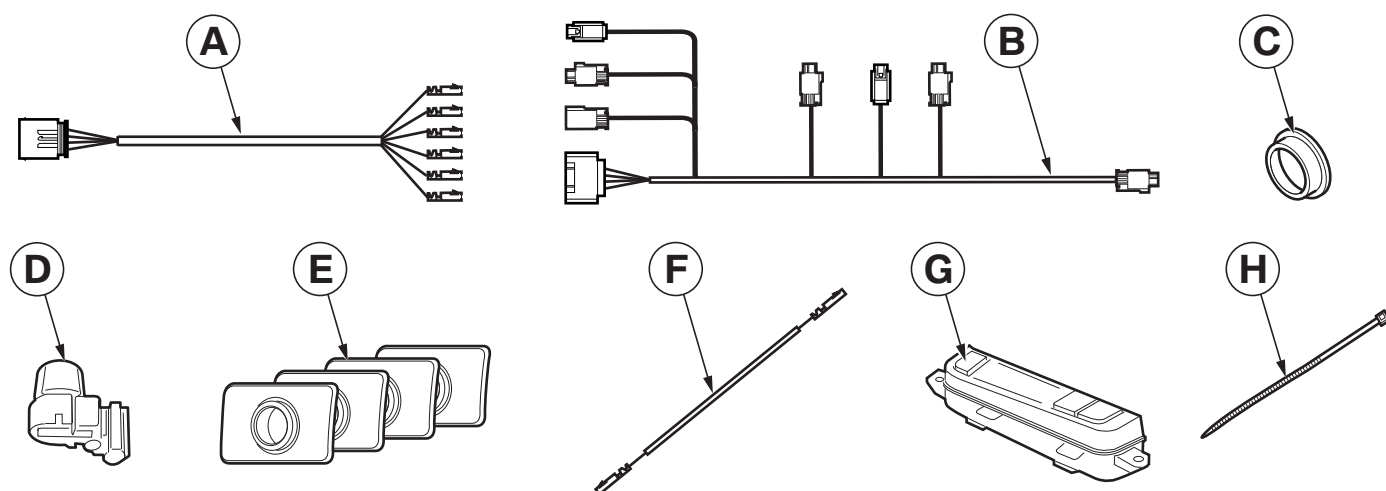
## Special tools required

00 9 317, Trim wedges

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## 1. Parts list



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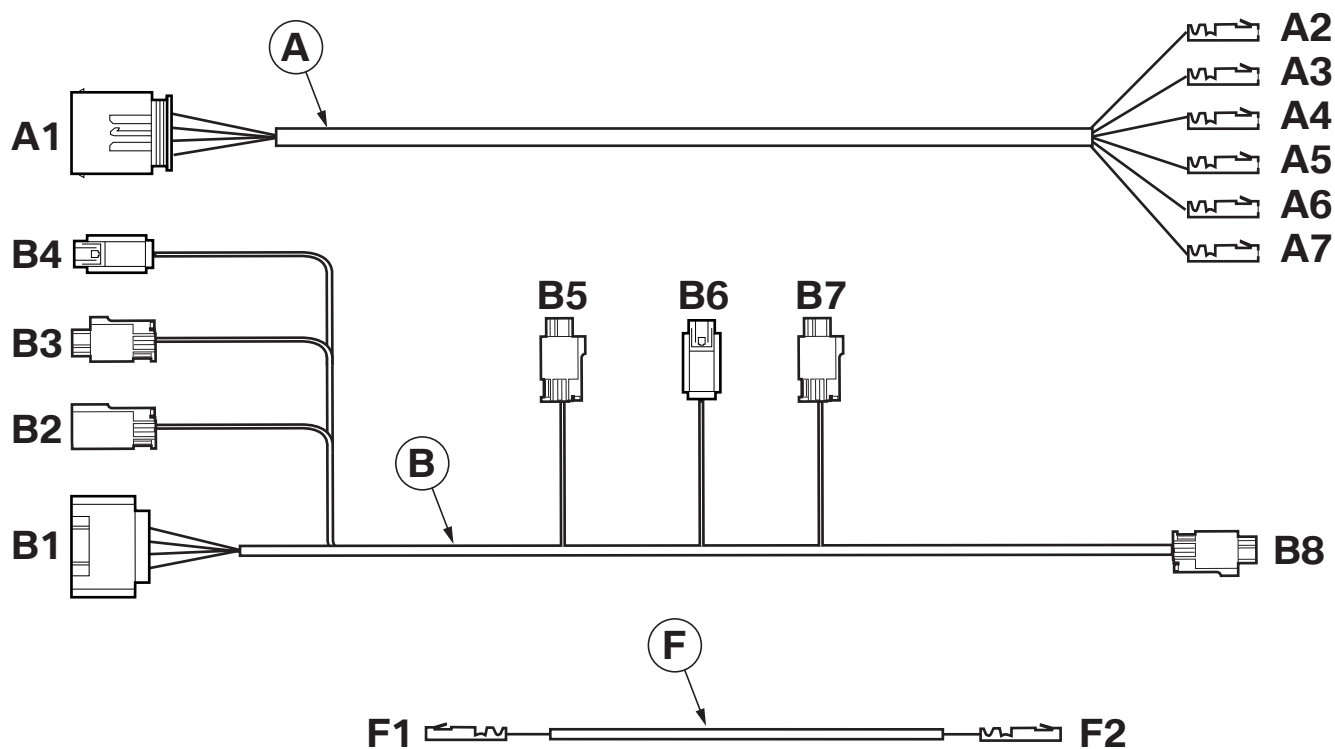
### Legend

- A** Front PDC retrofit wiring harness
- B** Front bumper wiring harness
- C** Decoupling ring (4 x)
- D** PDC sensor (4 x, not supplied with the retrofit kit)
- E** PDC sensor holder (equipment-dependent kit, not supplied with the retrofit kit)
- F** Centre console control unit retrofit cable
- G** Centre console control unit (not supplied with the retrofit kit)
- H** Cable tie 200 x 3.6 mm (20 x)

## 2. Preparatory work

	ISTA No.
Disconnect the negative terminal of the battery	12 00 ...
<b>The following components must be removed first of all</b>	
Luggage compartment floor trim	51 47 102
Luggage compartment wheel arch trim, right	51 47 161
Rear right (interior) door sill cover strip	51 47 030
Bottom right door pillar trim	51 43 150
Front right (interior) door sill cover strip	51 47 000
Bottom right dashboard trim	51 45 195
Glove compartment	51 16 366
Bottom right A pillar trim	51 43 075
Centre console control unit (no longer required)	61 31 197
Front bumper trim	51 11 156

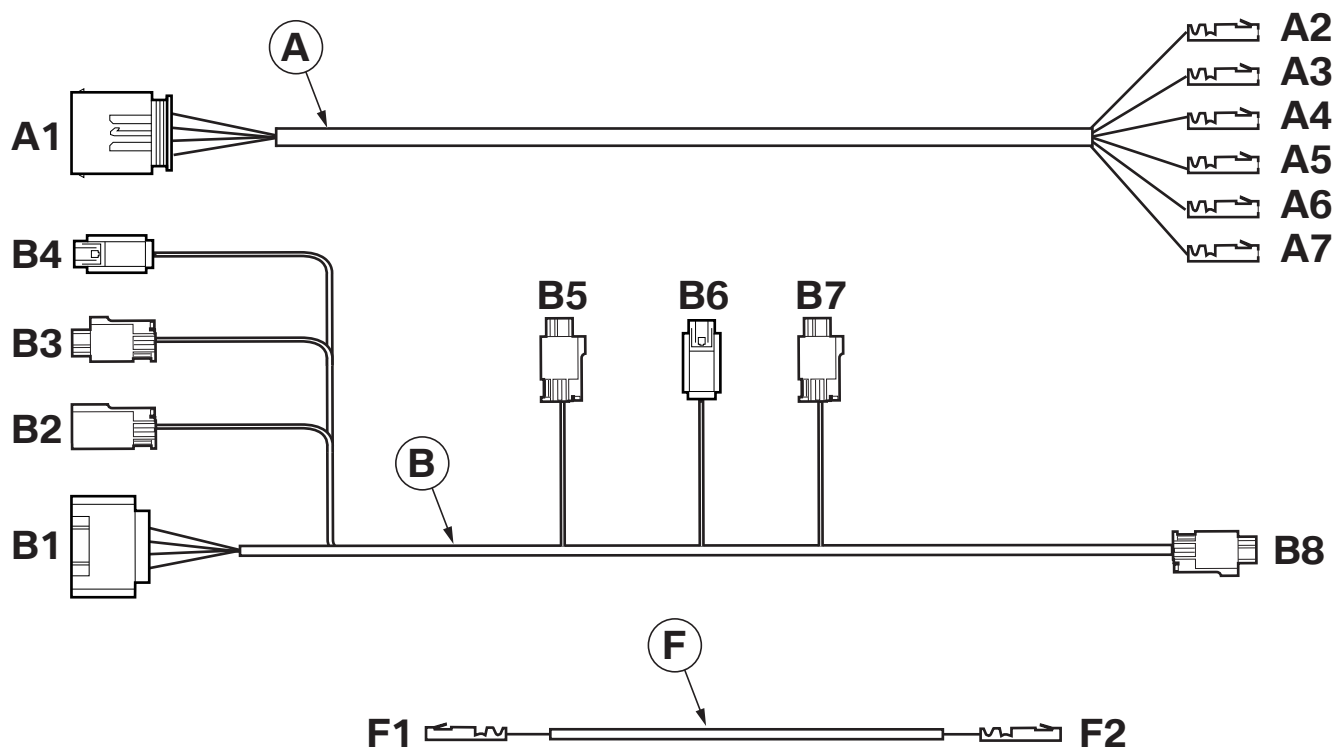
### 3. Connection diagram



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Item	Designation	Signal	Cable colour/ cross-section	Connection location in the car	Abbreviation/ slot
A	Front PDC retrofit wiring harness				---
A1	SW 6-pin socket casing			To branch <b>B1</b> , SW 6-pin pin housing	X187*1S
A2	Socket contact	U_SENS_V	GN/WS 0.35 mm <sup>2</sup>	To REM <b>A174</b>	A174*14B PIN 48
A3	Socket contact	GND_SENS_V	BR/WS 0.35 mm <sup>2</sup>	To REM <b>A174</b>	A174*14B PIN 36
A4	Socket contact	SENSOR_VL	BL/RT 0.35 mm <sup>2</sup>	To REM <b>A174</b>	A174*14B PIN 53
A5	Socket contact	SENSOR_VMR	BL/SW 0.35 mm <sup>2</sup>	To REM <b>A174</b>	A174*14B PIN 40
A6	Socket contact	SENSOR_VR	BL/BR 0.35 mm <sup>2</sup>	To REM <b>A174</b>	A174*14B PIN 41
A7	Socket contact	SENSOR_VML	BL/GN 0.35 mm <sup>2</sup>	To REM <b>A174</b>	A174*14B PIN 52

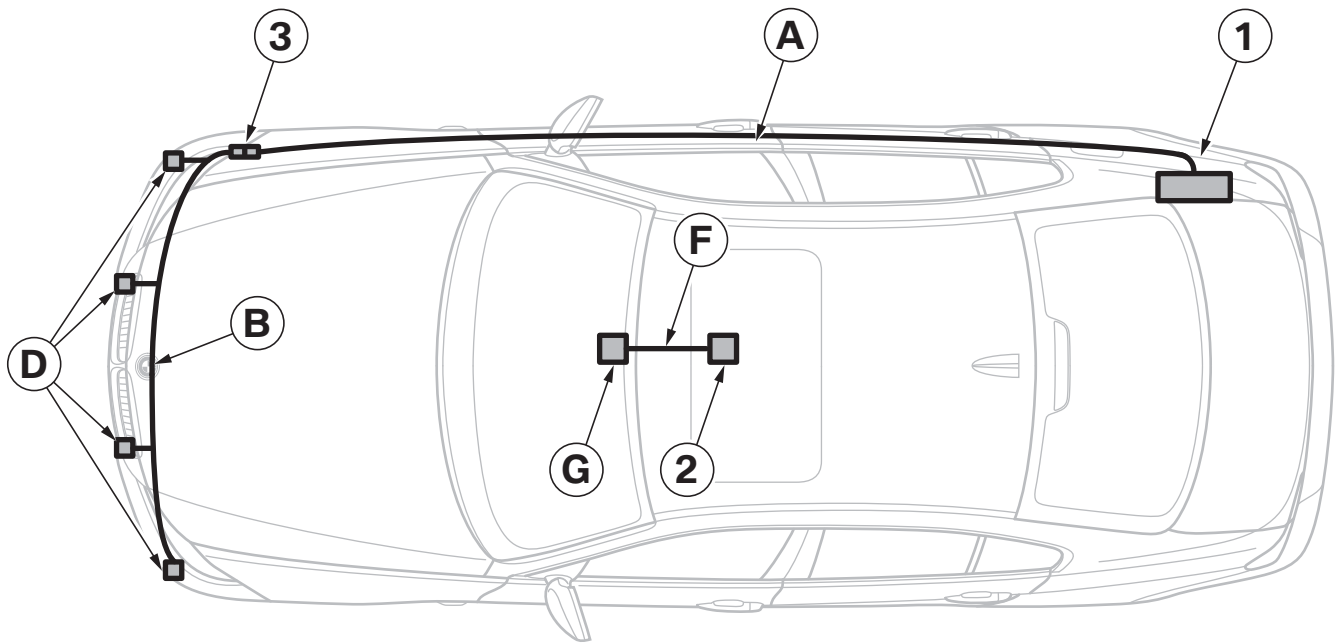
### 3. Connection diagram



F30 0248 Z

Item	Designation	Signal	Cable colour/ cross-section	Connection location in the car	Abbreviation/ slot
B	Front bumper wiring harness				---
B1	SW 6-pin pin housing			To branch <b>A1</b> , SW 6-pin socket casing	X187*1B
B2	SW 4-pin pin housing			<b>Cars with SA 8TF only</b> To pedestrian protection plug <b>Cars without SA 8TF only</b> Insulate and tie back	X252*1B
B3	SW 3-pin socket casing			To front right outside PDC sensor	B24*1B
B4	SW 2-pin socket casing			<b>Cars with SA 8TF only</b> To pedestrian protection pre-electronics <b>Cars without SA 8TF only</b> Insulate and tie back	A68*1S
B5	SW 3-pin socket casing			To front right inside PDC sensor	B25*1B
B6	SW 2-pin socket casing			<b>Cars with SA 8TF only</b> To centre pedestrian protection sensor <b>Cars without SA 8TF only</b> Insulate and tie back	B162*1B
B7	SW 3-pin socket casing			To front left inside PDC sensor	B27*1B
B8	SW 3-pin socket casing			To front left outside PDC sensor	B26*1B
F	Centre console control unit retrofit cable				
F1	Socket contact	FB_PDC	GE/BL 0.35 mm <sup>2</sup>	To centre console control unit plug	S69*1B PIN2
F2	Socket contact	FB_PDC	GE/BL 0.35 mm <sup>2</sup>	To ICM plug <b>A78</b>	A78*1B PIN6

#### 4. Installation and cabling diagram



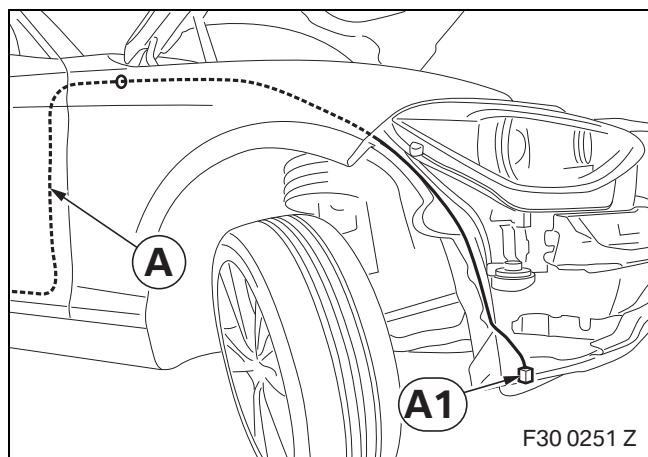
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- A** Front PDC retrofit wiring harness
- B** Front bumper wiring harness
- D** PDC sensors
- F** Centre console control unit retrofit cable
- G** Centre console control unit

- 1** REM **A174**
- 2** ICM **A78**
- 3** Plug connector **X187\*1B/X187\*1S**

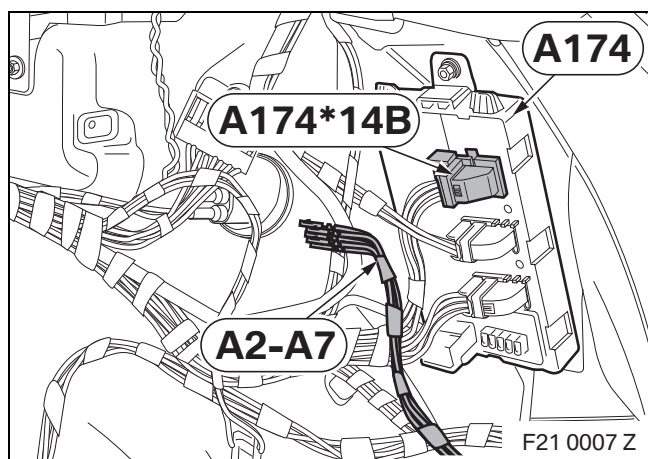


## 5. Installing and connecting the front PDC retrofit wiring harness



Route front PDC retrofit wiring harness **A** from the front-end along the right-hand side of the car to the REM installation point in the right-hand luggage compartment.

Position branch **A1** in the vicinity of the right fog light.

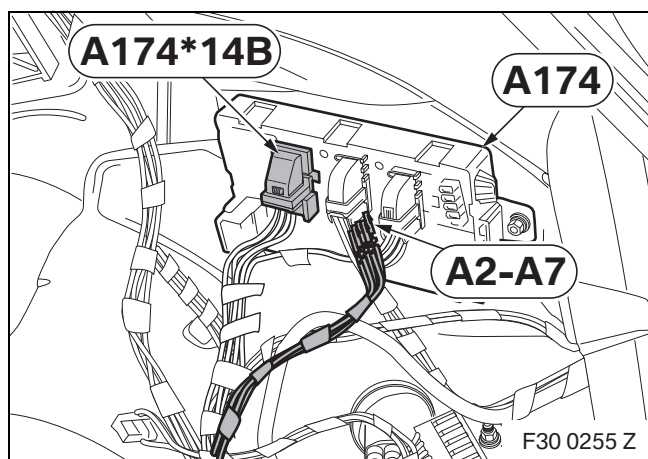


### F20/F21 cars only

Connect branches **A2-A7** as follows to plug **A174\*14B**, SW 54-pin socket casing, on REM **A174**:

- Branch **A2**, GN/WS cable, to PIN 48
- Branch **A3**, BR/WS cable, to PIN 36
- Branch **A4**, BL/RT cable, to PIN 53
- Branch **A5**, BL/SW cable, to PIN 40
- Branch **A6**, BL/BR cable, to PIN 41
- Branch **A7**, BL/GN cable, to PIN 52

Connect plug **A174\*14B** to REM **A174**.



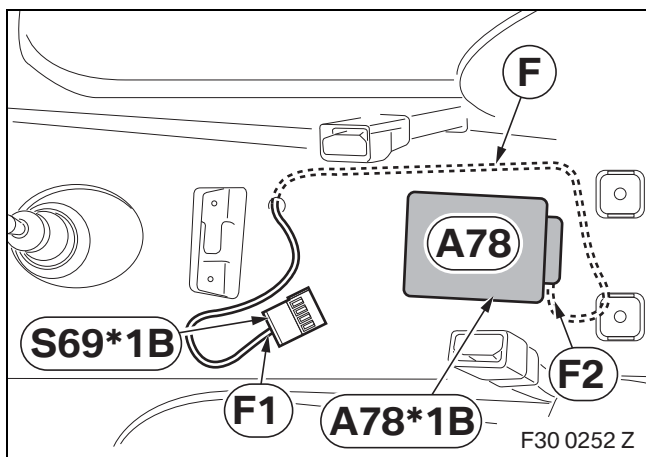
### F30/F31 cars only

Connect branches **A2-A7** as follows to plug **A174\*14B**, SW 54-pin socket casing, on REM **A174**:

- Branch **A2**, GN/WS cable, to PIN 48
- Branch **A3**, BR/WS cable, to PIN 36
- Branch **A4**, BL/RT cable, to PIN 53
- Branch **A5**, BL/SW cable, to PIN 40
- Branch **A6**, BL/BR cable, to PIN 41
- Branch **A7**, BL/GN cable, to PIN 52

Connect plug **A174\*14B** to REM **A174**.

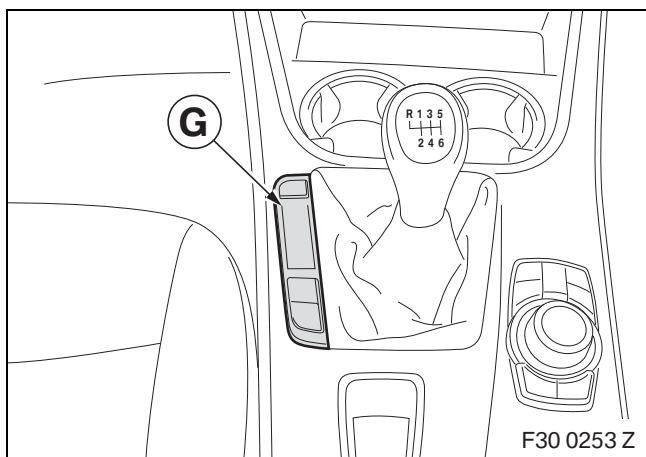
## 6. Installing and connecting the centre console control unit



Route centre console control unit retrofit cable **F** from plug **S69\*1B**, BL 10-pin socket casing to plug **A78\*1B**, SW 54-pin socket casing on ICM control unit **A78**.

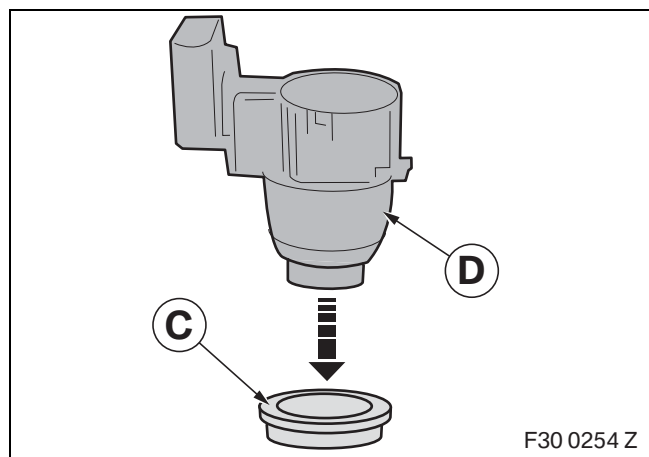
Connect centre console control unit retrofit cable **F** as follows.

- Branch **F1**, GE/BL cable, to PIN 2 of 4-pin plug **S69\*1B**
- Branch **F2**, GE/BL cable, to PIN 6 of 54-pin plug **A78\*1B**

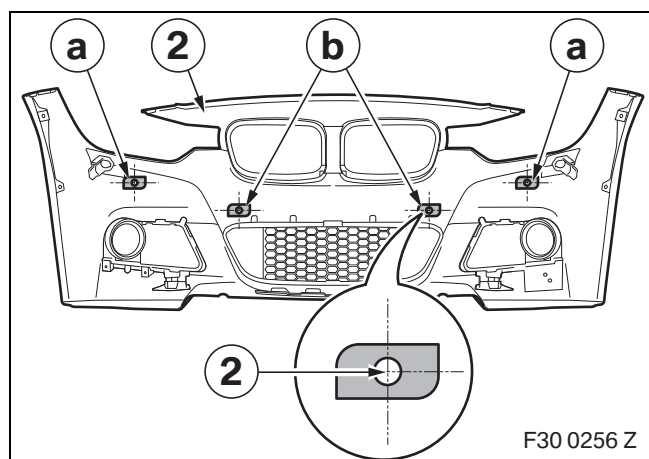


Install centre console control unit **G** as per ISTA No. 61 31 197.

## 7. Installing the PDC sensors and installing and connecting the front bumper wiring harness



▶ Ensure that decoupling rings **C** are connected to PDC sensors **D**. ◀



▶ The diameter of the drill holes may differ due to production or equipment variations; the precise diameter must be determined on the embossed areas (1) before drilling. Carry out the drilling in stages. ◀

Draw drilling points onto the bumper trim (2) and pre-drill with a 3 mm spiral drill bit.

### **F20/F21 cars without SA 337 only**

- Drill holes **a** outside: diameter 18 mm
- Drill holes **b** inside: diameter 32 mm

### **F20/F21 cars with SA 337 only**

- All drill holes diameter 18 mm

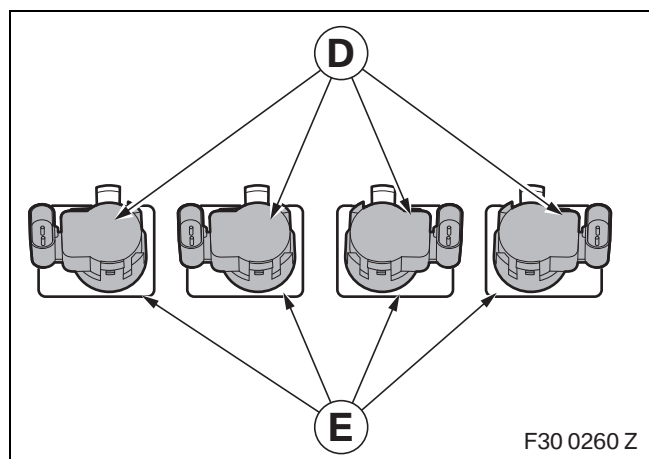
### **F30/F31 cars without SA 337 only**

- All drill holes diameter 18 mm

### **F30/F31 cars with SA 337 only**

- Drill holes **a** outside: diameter 18 mm
- Drill holes **b** inside: diameter 30 mm

Carefully deburr the drill holes and clean the pre-embossed bonding surfaces to ensure they are free from grease.

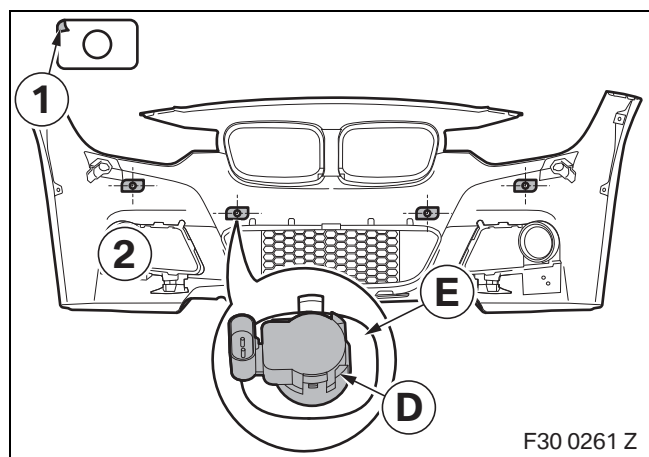


### **All cars**

▶ PDC sensor holders **E** are coded; before installation, hold PDC sensors **E** in the installation point as a trial. The correct installation position of PDC sensor holder **E** is absolutely essential. ◀

Press PDC sensors **D** into PDC sensor holder **E** (note the coding). Ensure that PDC sensors **D** audibly engage into PDC sensor holders **E**.

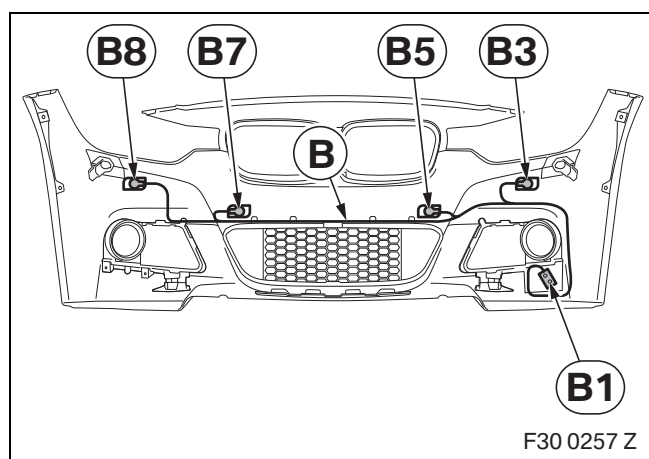
## 7. Installing the PDC sensors and installing and connecting the front bumper wiring harness



### All cars

▶ The pre-embossed bonding surfaces must be clean and free from grease to guarantee a good adhesive effect. PDC sensor holders **E** are coded. ◀

Remove the protective backing film (1) on PDC sensor holder **E**. Bond PDC sensor holder **E** with PDC sensors **D** on the pre-embossed markings and drill holes on the bumper trim (2) and press on firmly.



### Cars without SA 8TF only

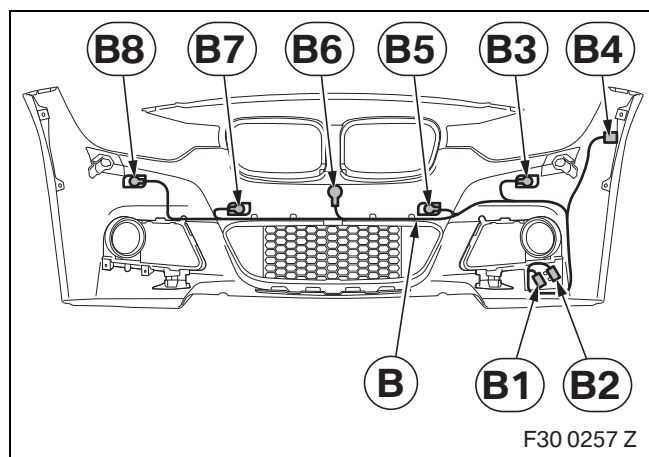
Route front bumper trim wiring harness **B** into the bumper trim (1) and connect as follows to PDC sensors **D**:

- Clip branch **B1** to the designated installation point
- Connect branch **B3** to the front right outside PDC sensor
- Connect branch **B5** to the front right inside PDC sensor
- Connect branch **B7** to the front left inside PDC sensor
- Connect branch **B8** to the front left outside PDC sensor

Insulate and tie back any unconnected branches.

Install the bumper trim (1) and connect branches **A1** and **B1**.

## 7. Installing the PDC sensors and installing and connecting the front bumper wiring harness



### Cars with SA 8TF only

Route front bumper trim wiring harness **B** into the bumper trim (1) and connect as follows to PDC sensors **D** and the pedestrian protection sensors:

- Clip branch **B1** to the designated installation point
- Clip branch **B2** to the designated installation point
- Connect branch **B3** to the front right outside PDC sensor
- Connect branch **B4** to the pedestrian protection pre-electronics
- Connect branch **B5** to the front right inside PDC sensor
- Connect branch **B6** to the centre pedestrian protection sensor
- Connect branch **B7** to the front left inside PDC sensor
- Connect branch **B8** to the front left outside PDC sensor

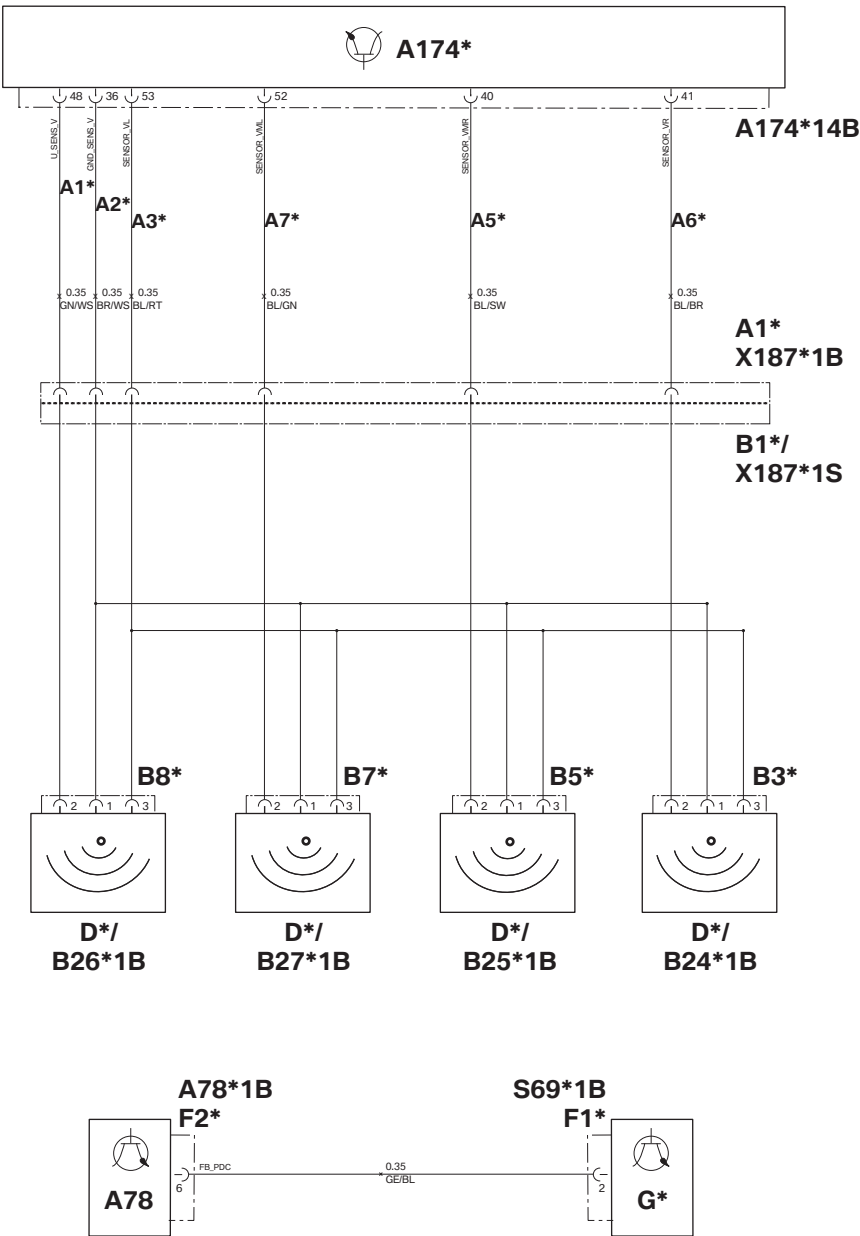
Install the bumper trim (1) and connect branches **A1** and **B1**.

## 8. Concluding work and coding

The retrofit system requires programming/coding.

- Connect the battery
- Carry out a vehicle test using the ISTA system and note or work through any entered error memory.
- Change in the ISTA/P car programming
- Select the “Park Distance Control” retrofit via the – **Conversion** – path and work through the created action plan
- If using ISTA/P, please note the instructions in the ISTA/P application documentation
- Check the function of the Park Distance Control
- Re-assemble the car appropriately

9. Wiring diagram



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## 9. Wiring diagram

### Legend

**A1\*** SW 6-pin socket casing **X187\*1B**, to branch **B1\***, SW 6-pin pin housing **X187\*1S**  
**A2\*–A7\*** Socket contact, to SW 54-pin socket casing **A174\*14B**

**B1\*** SW 6-pin pin housing **X187\*1S**, to branch **B1\*** SW 6-pin socket casing **X187\*1B**  
**B3\*** Natural 3-pin socket casing, to front right outside sensor **D\* B24\*1B**  
**B5\*** Natural 3-pin socket casing, to front centre right sensor **D\* B25\*1B**  
**B7\*** Natural 3-pin socket casing, to front centre left sensor **D\* B27\*1B**  
**B8\*** Natural 3-pin socket casing, to front left outside sensor **D\* B26\*1B**

**F1\*** Socket contact, to SW 4-pin plug **S69\*1B** on centre console control unit **G\***  
**F2\*** Socket contact, to SW 54-pin plug **A78\*1B** on ICM control unit **A78**

**A174** REM  
**A78** ICM control unit

**A78\*1B** SW 54-pin socket casing on ICM control unit **A78**  
**S69\*1B** BL 10-pin socket casing on centre console control panel **G\***

**D\*** PDC sensors  
**G\*** Centre console control panel

All the designations marked with an asterisk (\*) apply only to these installation instructions or this wiring diagram.

### Cable colours

BL	Blue	GR	Grey	RT	Red
BO	Bordeaux (Burgundy)	L-GN	Light green	SW	Black
BR	Brown	NT	Natural	TR	Transparent
GE	Yellow	OR	Orange	VI	Violet
GN	Green	RO	Pink	WS	White