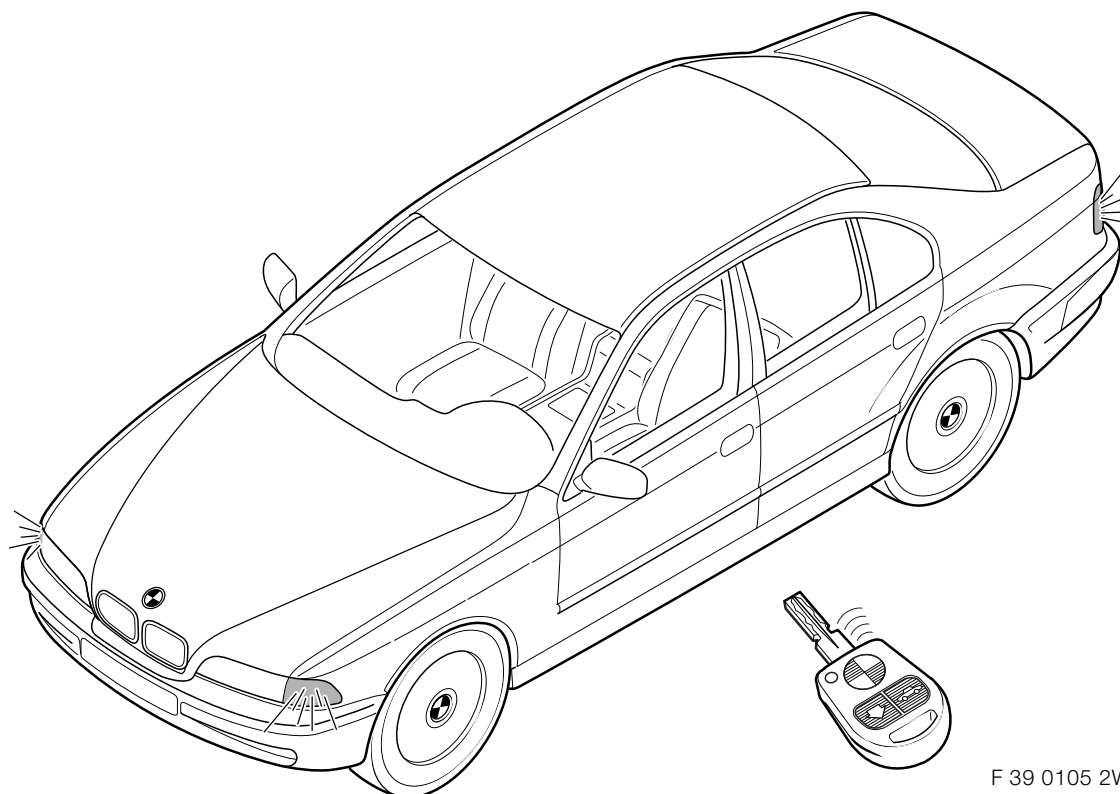




BMW Parts and Accessories Installation Instructions



F 39 0105 2W

Retrofit Anti-theft Alarm System (DWA) **series-identical retrofit for** **BMW 5 Series saloon and touring (E 39, E 39/2) left-hand drive**

Installation time approx. 6.5 hours, which can vary according to the conditions and fittings of the vehicle.

Retrofit/Installation Kit no.

Saloon with production date prior to 10/97 65 60 0 141 915

Saloon with production date after 10/97 to 09/01 65 60 0 021 519

touring with production date prior to 10/97 65 60 0 141 916

touring with production date after 10/97 to 09/01 65 60 0 026 669

Contents

Chapter	Page
1. Preparatory work	21
2. Installation and cabling diagram	22
3. Connection overview of the anti-theft alarm system (DWA) cable set	23
4. Install DWA cable set	25
5. Install ultrasound module	29
6. Install and connect components of the anti-theft alarm system (DWA)	32
7. Coding 14	
8. Wiring diagram DWA E 39	34
9. Template	36

Note on ordering

A colour-coded cover is required to install the alarm system. This is not supplied with the installation kit.

The alarm system may only be installed with the remote control (SA 305), standard from 9/97 and the base module with alarm function, standard from 3/97, functioning. These components may have to be retrofitted separately.

Important notes

Target Group

Target group for these installation instructions are technical personnel trained on BMW vehicles, who have special knowledge of body electronics.

Tasks:

Carry out all maintenance, repair and installation work on BMW vehicles on own authority.

All operations should be carried out with the aid of the current BMW

repair instruction manuals

circuit diagrams

in a logical sequence using the prescribed tools (special tools) whilst observing the applicable health and safety regulations.

Should given pin spaces be already assigned, bridges, double crimping or parallel connections will have to be made.



Do not on any account work with so-called "Scotchlock quick connectors" as these can trigger faults in the on-board electronics. ◀



Tightening torques for screwed connections should be observed. Please refer to the parts information system (TIS) for the required tightening torques. ◀



Take care to see that cables do not get kinked or damaged when they are being installed as otherwise faults may occur which can only be localised later by extensive reworking. Costs arising in this way will not be reimbursed by BMW. ◀

Required tools and auxiliary materials

MoDiC or DIS

Set of flat-tipped screwdrivers

Set of Phillips screwdrivers

Set of TORX wrenches

Hand lamp

Set of 1/2 inch socket wrenches

Crimping pliers for AMP contacts

Carpet knife

Crimping pliers for AMP annular contacts

Wire strippers

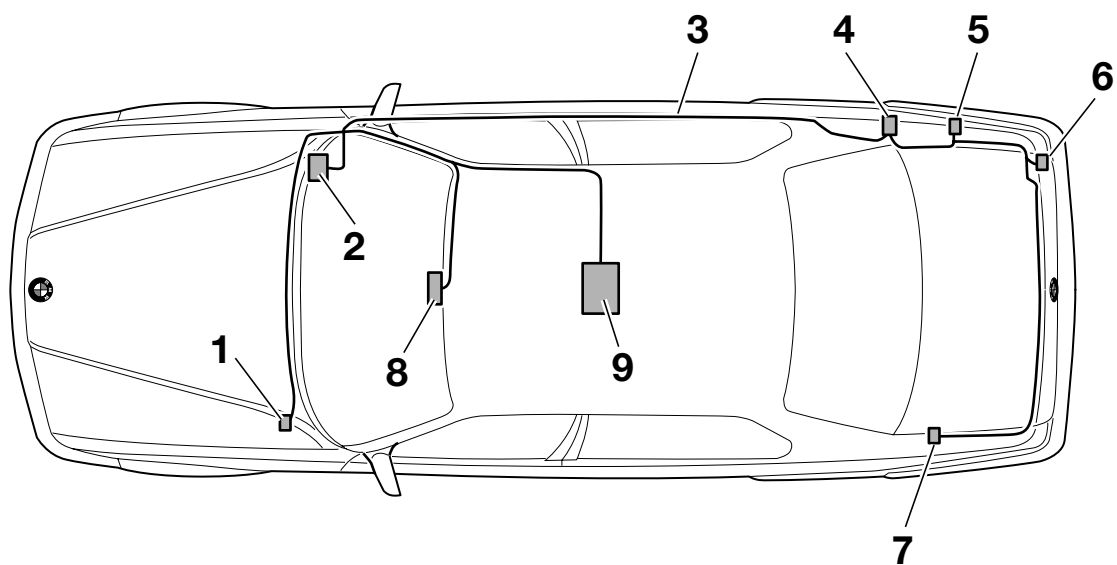
Side cutters

Marker pen

1. Preparatory work

	TIS AW-Nr.
Carry out short test	
Disconnect negative terminal of the battery	12 00...
The following components should be dismantled first:	
Glove box	51 16 360
Micro-filter housing, right	
Cover of the E box	
Roof liner	51 44 001 or 51 44 011
Rear seat bench and back	52 24 005
Trim of closing panel, boot	51 46 050
Inner sill skirt, right	51 47 00 or 51 47 030
Trim panels in boot on left and right	
Right rear wheel	36 10 300
Trim panel of wheel arch, right rear	

2. Installation and cabling diagram

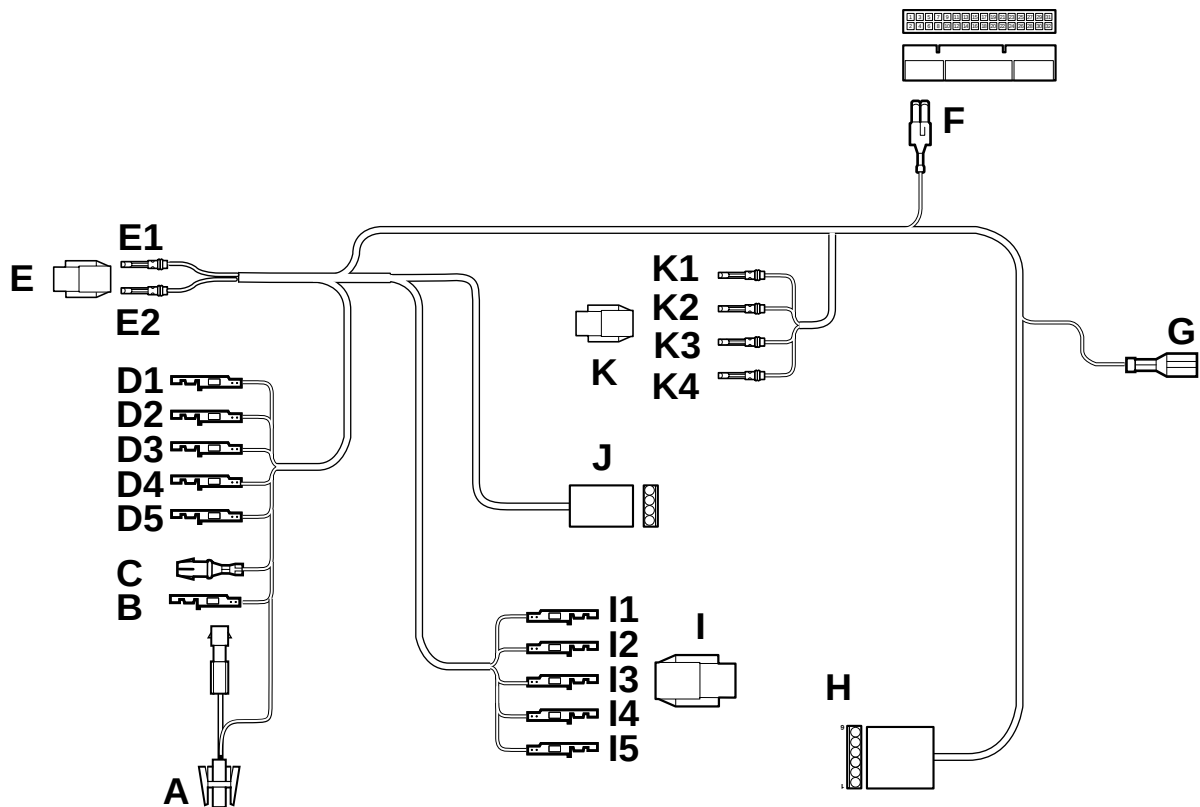


F 39 0106 2W

Key

- 1 Contact, engine compartment
- 2 Body electronics control module
- 3 Cable set
- 4 Siren
- 5 Fuse holder
- 6 Connection, earth
- 7 Tilt-alarm sensor
- 8 Inside rear-view mirror
- 9 Ultrasound module

3. Connection overview of the anti-theft alarm system (DWA) cable set



F 39 0107 2W

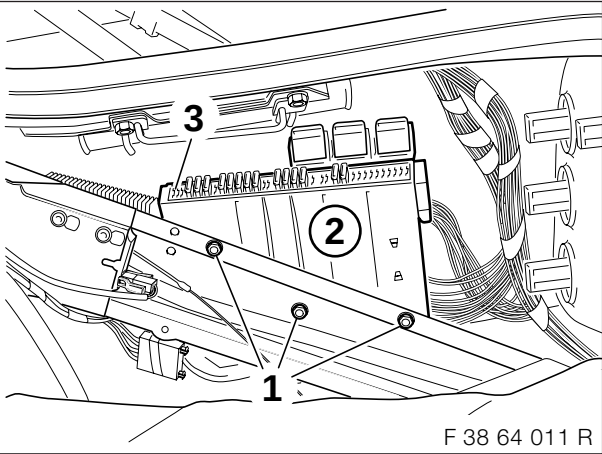
Item	Designation	Signal	Cable colour/ cross-section	Connection point in vehicle	Code designation/ plug-in place
A	Twin-lead terminal	Terminal 15	GN/WS 0.35 mm ²	At fuse holder	Fuse plug-in place F21
B	Blade terminal contact	Reversing light	BL/GE 0.35 mm ²	At light module A3	54-pole black connector X10117, PIN 39
C	Annular contact	Siren	SW/BL 0.50 mm ²	At body electronics control module A1	18-pole black connector X254, PIN 17
D1	Blade terminal contact	Ultrasound module	SW/GE 0.50 mm ²	At body electronics control module A1	26-pole black connector X253, PIN 5
D2	Blade terminal contact	Tilt alarm sensor	SW/BL 0.5 mm ²	At body electronics control module A1	26-pole black connector X253, PIN 8
D3	Blade terminal contact	Bonnet	VI/GN 0.5 mm ²	At body electronics control module A1	26-pole black connector X253, PIN 2
D4	Blade terminal contact	Diode	GR/SW/GE 0.5 mm ²	At body electronics control module A1	26-pole black connector X253, PIN 19
D5	Blade terminal contact Connector/contact, bonnet	Tilt alarm sensor	SW/RT 0.5 mm ²	At body electronics control module A1	26-pole black connector X253, PIN 20

Blade terminal contact

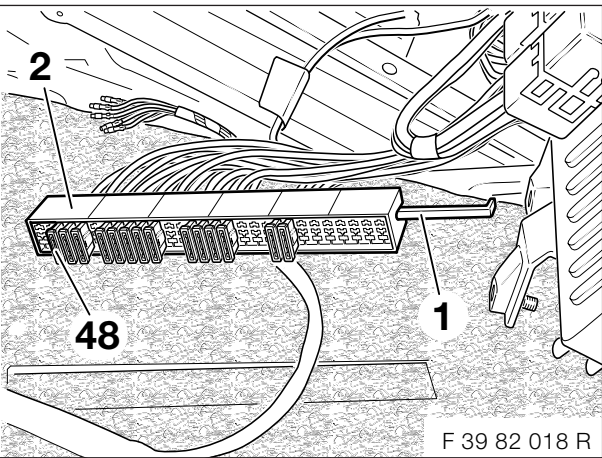
3. Connection overview of the anti-theft alarm system (DWA) cable set

Item	Designation	Signal	Cable colour/ cross-section	Connection point in vehicle	Code designation/ plug-in place
E	Connector/contact, bonnet	————	————	At contact, bonnet	3-pole black connector X161
E1	Blade terminal contact	Bonnet	VI/GN 0.5 mm ²	At contact, bonnet	3-pole black connector X161 PIN 3
E2	Blade terminal contact	Earth	BR 0.5 mm ²	At contact, bonnet	3-pole black connector X161 PIN 1
F	Blade terminal contact	Terminal 30	RT/SW 0.5 mm ²	At fuse holder	Fuse plug-in place F48
G	Blade terminal contact	Earth	BR/SW 0.5 mm ²	At joint connector	X494
H	Connector, tilt alarm sensor	————	————	At tilt alarm sensor	6-pole black connector X222
I1	Blade terminal contact	Terminal 15	GN/WS 0.5 mm ²	At interior rear-view mirror	10-pole black connector X18246 PIN 3
I2	Blade terminal contact	Reversing light	BL/GE 0.35 mm ²	At interior rear-view mirror	10-pole black connector X18246 PIN 1
I3	Blade terminal contact	Diode	GR/SW/GE 0.5 mm ²	At interior rear-view mirror	10-pole black connector X18246 PIN 9
I4	Blade terminal contact	Earth	BR/SW 0.35 mm ²	At interior rear-view mirror	10-pole black connector X18246 PIN 10
I5	Blade terminal contact	Terminal 30	RT/SW 0.35 mm ²	At interior rear-view mirror	10-pole black connector X18246 PIN 8
J	Connector, ultrasound module	————	————	At ultrasound module	4-pole black connector X1582
K	Connector, siren	————	————	In wheel arch, rear right	4-pole black connector X372
K1	Blade terminal contact	Earth	BR 0.5 mm ²	At the siren	4-pole black connector X372 PIN 1
K2	Blade terminal contact	Activation	SW/RT 0.5 mm ²	At the siren	4-pole black connector X372 PIN 2
K3	Blade terminal contact	Terminal 30	RT/SW 0.75 mm ²	At the siren	4-pole black connector X372 PIN 3
K4	Blade terminal contact	Siren	SW/BL 0.5 mm ²	At the siren	4-pole black connector X372 PIN 4

4. Install DWA cable set

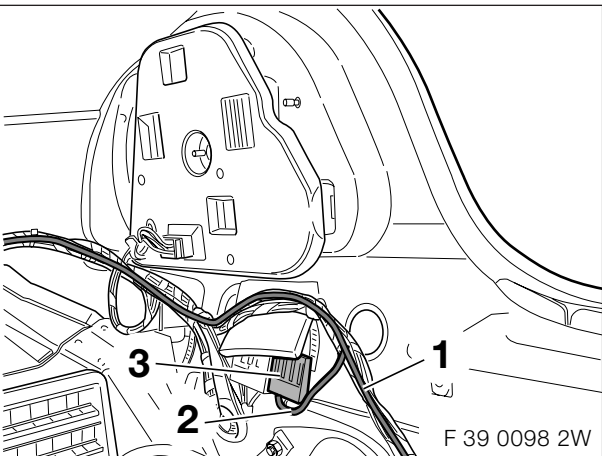


Remove hexagon nuts (1).
Take out fuse holder (2). Press in catch mechanism of the fuse strip (3). Press out fuse strip (3) downwards.

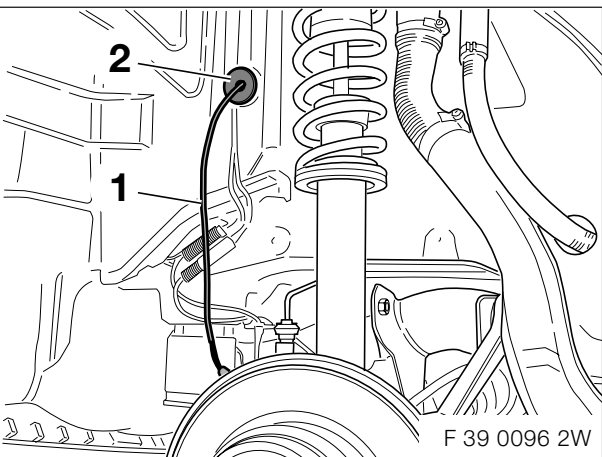


Pull out locking mechanism (1) from the fuse strip (2).
Insert branch cable **F**, cable colour red/black, in the fuse strip, plug-in place F48. Reassemble fuse holder.
Insert flat-bladed fuse 5A in plug-in place F48.

▶ If the fuse strip terminal 30 is not assigned, install supplied power supply cable. ◀



Insert branch cable (2) **G**, cable colour brown/black, in the joint connector (3) X494.
Install branch cable **H** (1) along rear closing panel toward the left.

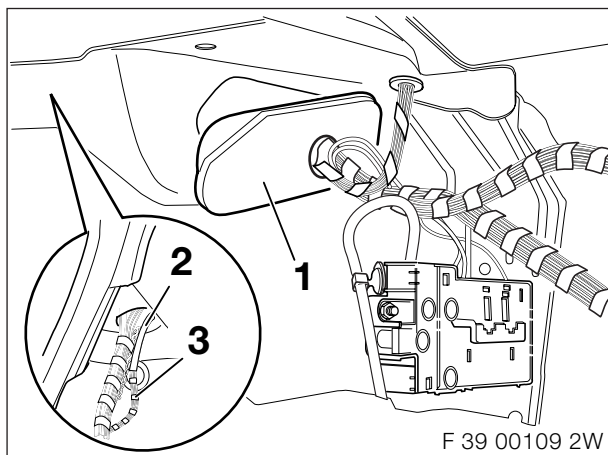


Install branch cables **K1-K4** (1) through the grommet (2) in the wheel arch, rear right.
Pin branch cables as follows in connector X372:

Branch cable	Cable colour	PIN
K1	brown	1
K2	black/red	2
K3	red/black	3
K4	black/blue	4

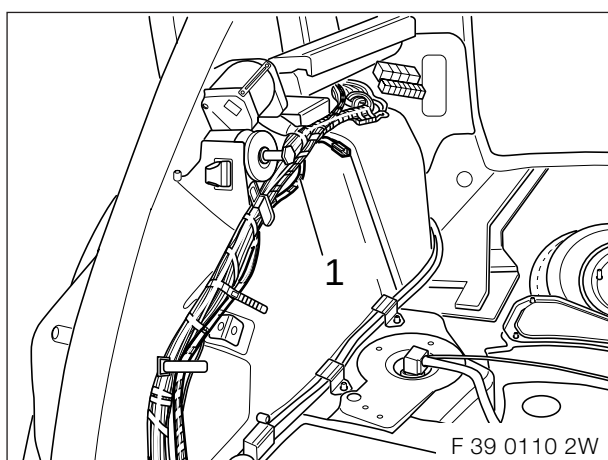
▶ Do not mix up black/red and red/black connection cables. ◀

4. Install DWA cable set



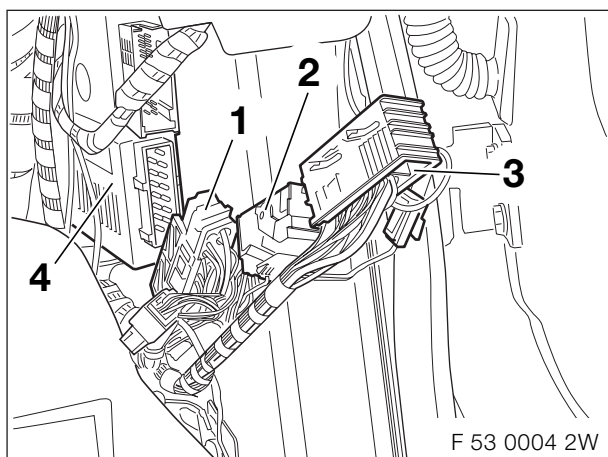
Only saloons

Remove lead-through grommet (1) in the boot. Install branch cables (3) **A-E** and **J** with the aid of a wire (2) under the bottom of the storage tray in the interior compartment and then behind the glove box.



Only touring

Install branch cables (1) **A-E** and **J** along the series wiring harness behind the glove box.



Install branch cable **B**, cable colour blue/yellow to light module A3 (4).

Pull out connectors (1, 2 and 3) from light module (4).

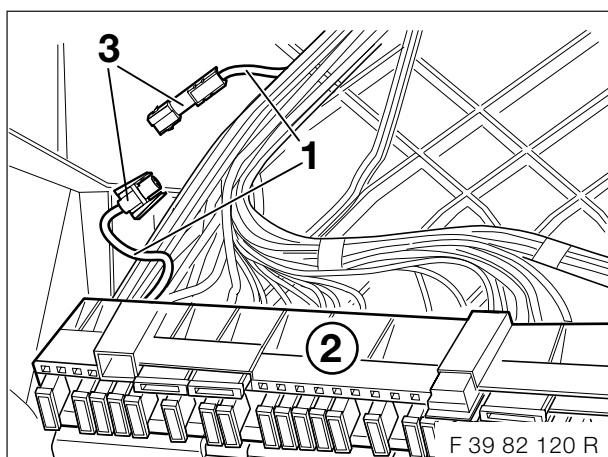
Decouple black 54-pole connector (2) X10117.

Insert branch cable **B**, cable colour blue/yellow, in PIN 39.

Connect all connectors again onto the light module A3 (4).

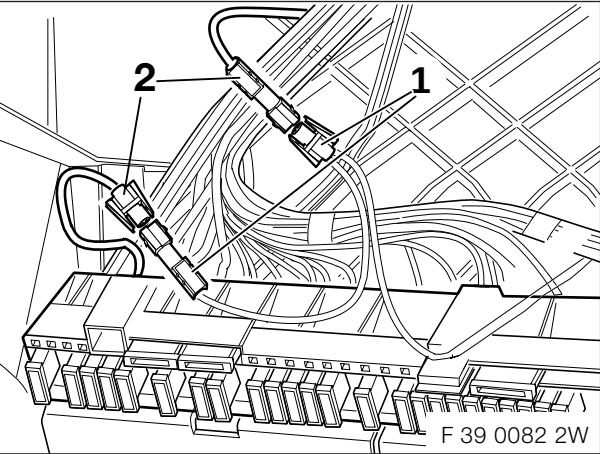


If the connection is already assigned, connect branch cable **B** to PIN 39 by means of a twin-lead terminal. ◀

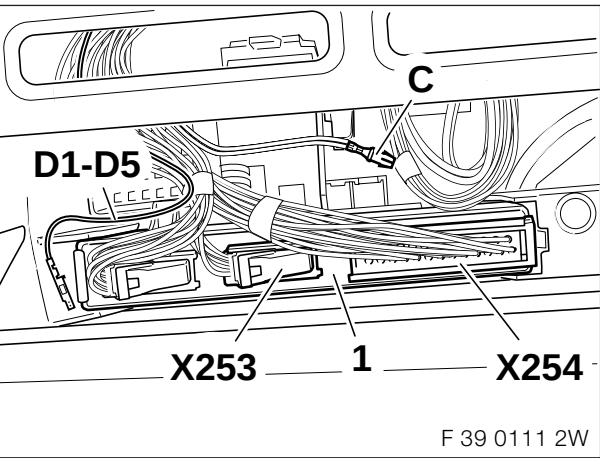


Going out from fuse holder (2), cut green/white cable (1) of fuse F21. Provide cable ends with socket and pin contacts and plug on to appropriate housing (3).

4. Install DWA cable set



Connect together branch cable (1) **A**, cable colour green/white, with the connections (2).

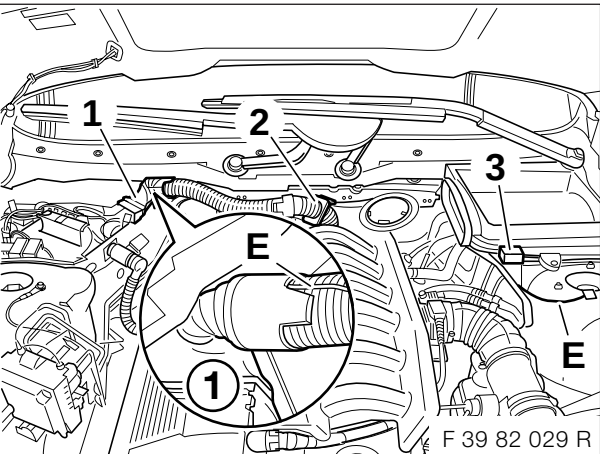


! Vehicles with a Low body electronics control module must have this replaced by a High body electronics control module. ◀

Pull out and decouple 18-pole black connector X254.
Insert branch cable C, cable colour black/blue, in PIN 17.

Pull out and decouple 26-pole black connector X253.
Pin branch cables **D1-D5** as follows into connector X253:

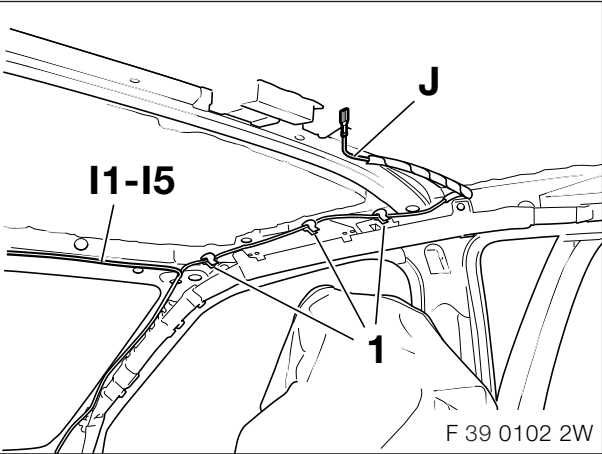
Branch cable	Cable colour	PIN
D1	black/yellow	5
D2	black/blue	8
D3	violet/green	2
D4	grey/black/yellow	19
D5	black/red	20



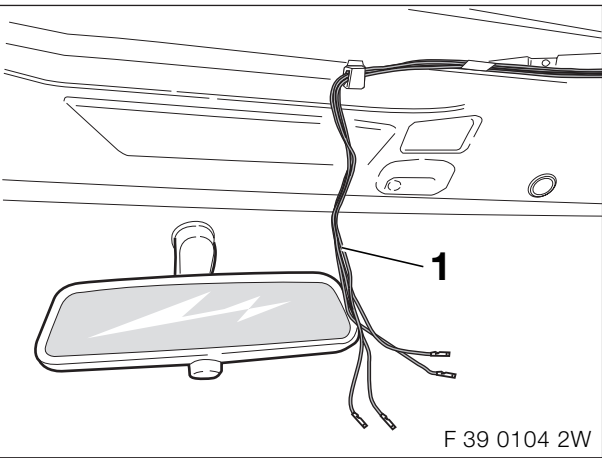
Install branch cables **E1** and **E2** through the E box grommet (1) into the engine compartment.

Install branch cables **E1** and **E2** along the front bulkhead (2) to the support (3) for the bonnet contact. Fix branch cables at suitable places with cable straps.

4. Install DWA cable set



Install branch cables **I1-I5** and **J** along the right-hand side A-pillar to the roof liner. Fasten branch cable **J** to the roof frame with supplied clips (1).



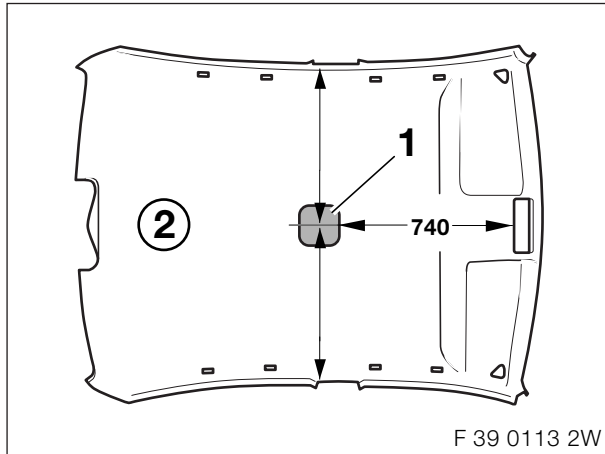
Install branch cables (1) **I1-I5** to the inside rear-view mirror.

▶ In vehicles with rain sensor, tie back branch cables **I1-I2** and **I4-I5**. Pin branch cable **I3** in this case to the existing connector X1582, PIN 9. ◀

Pin branch cables **I1-I5** into connector X1582 as follows:

Branch cable	Cable colour	PIN
I1	green/white	3
I2	blue/yellow	1
I3	grey/black/yellow	9
I4	brown/black	10
I5	red/black	8

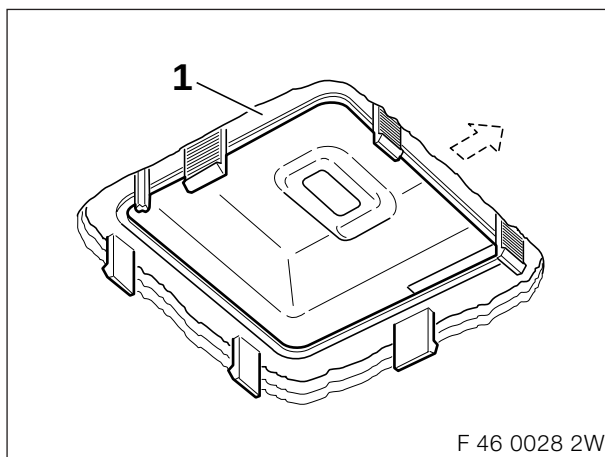
5. Install ultrasound module



Copy measurement and stick template centrally onto the roof liner (2).
Make opening (1) with a sharp carpet knife.

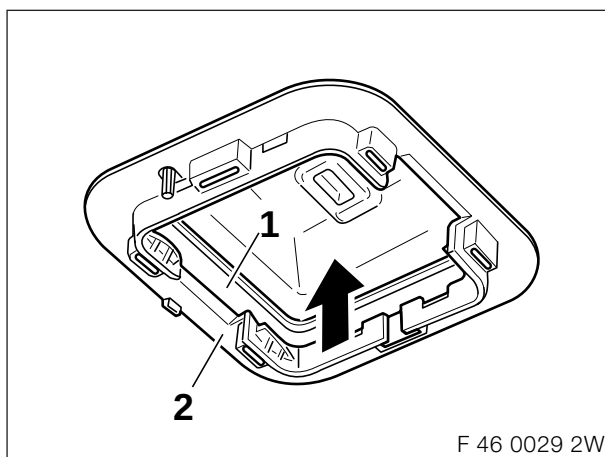


The measurement is valid for all body variants. ◀



Note direction of installation. The arrow of the upper part of the accessory frame must point in the direction of travel. ◀

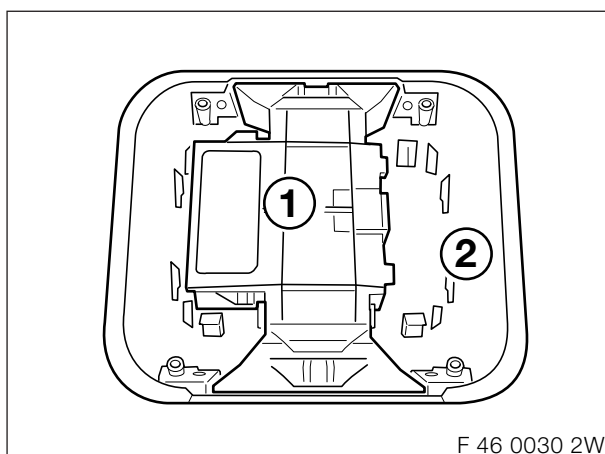
Insert upper part of the accessory frame (1) from above into the opening in the vehicle headlining.



Note direction of installation. The arrow of the lower part of the accessory frame (2) must point in the direction of travel. ◀

Lock the lower accessory frame (2) into the upper accessory frame (1).

Install roof liner in the vehicle again.



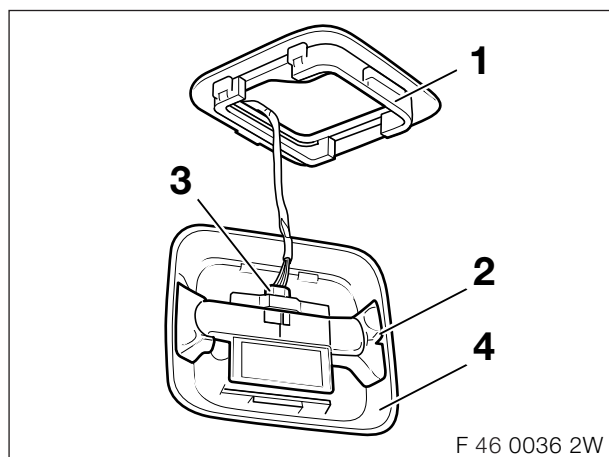
Note installation direction. The arrows of the ultrasound module (1) must point in the direction of travel. ◀

Insert ultrasound module (1) in the cover (2).



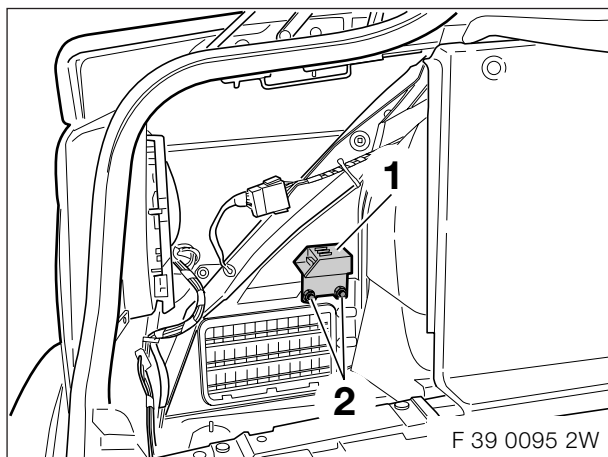
The cover (2) has to be ordered separately to match the interior trim and upholstery. ◀

5. Install ultrasound module

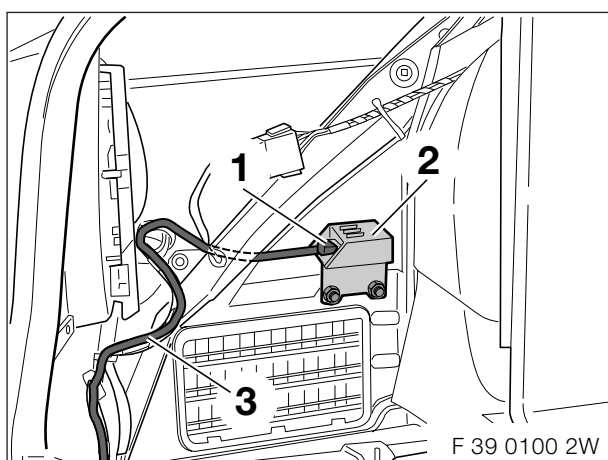


Connect black, 4-pole connector X1582 (3) to the ultrasound module (2).
Connect cover (4) to the frame (1).

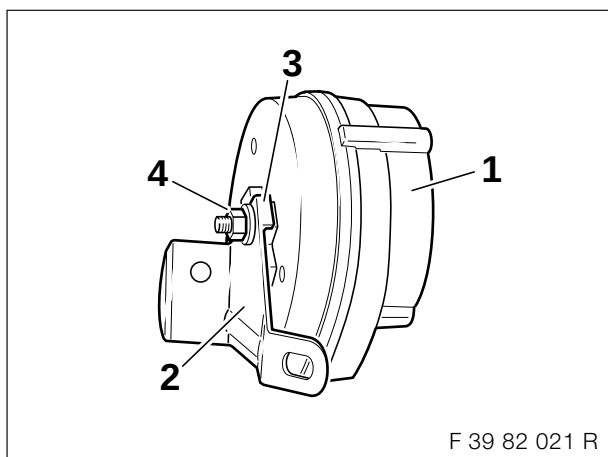
6. Install and connect components of the anti-theft alarm system (DWA)



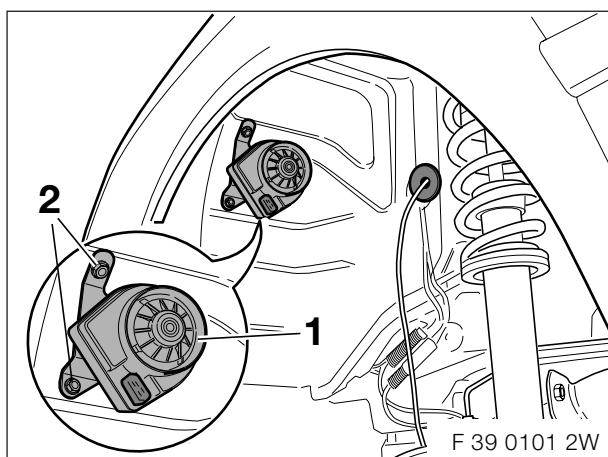
Fasten tilt alarm sensor (1) with plastic nuts (2).



Connect branch cable (1) **H** to tilt alarm sensor (2).
Fix cable (3) with cable straps.

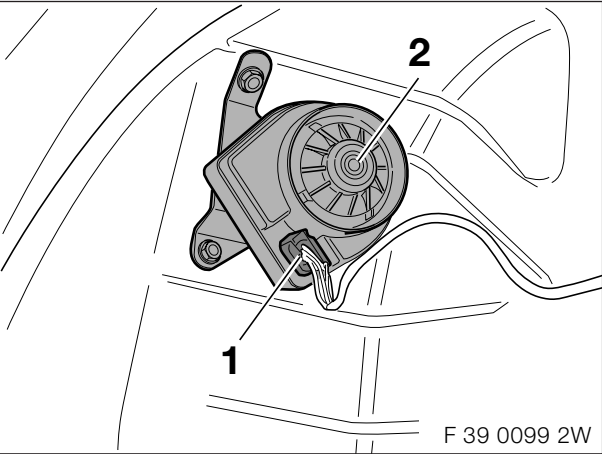


Place siren (1) on the bracket (2) whilst paying attention to the locking device (3).
Fasten siren with flanged nut M6 (4).

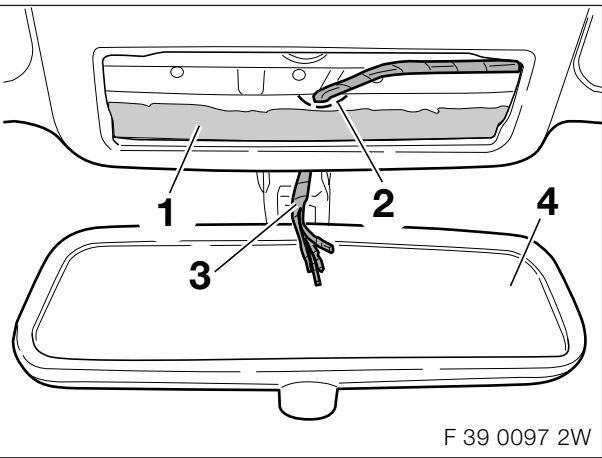


Fasten siren (1) with plastic nuts (2).

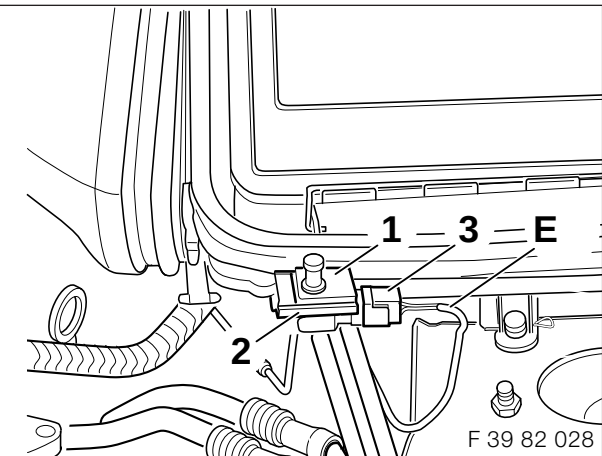
6. Install and connect components of the anti-theft alarm system (DWA)



Connect branch cable **K** (1) to the siren (2).



Install inside rear view mirror (4) supplied with the installation kit.
Install branch cable I (3) through the opening (2) at the roof liner (1) to the inside rear view mirror and connect it.
Mount the cover of the inside rear view mirror.



Insert contact for the bonnet (1) as shown in the support (2) at the left microfilter housing.

Pin branch cables E1 and E2 as follows into the connector X161:

Branch cable	Cable colour	PIN
E1	brown	1
E2	violet/green	3

Connect connector X161 (3) to contact for the bonnet (1).

7. Coding

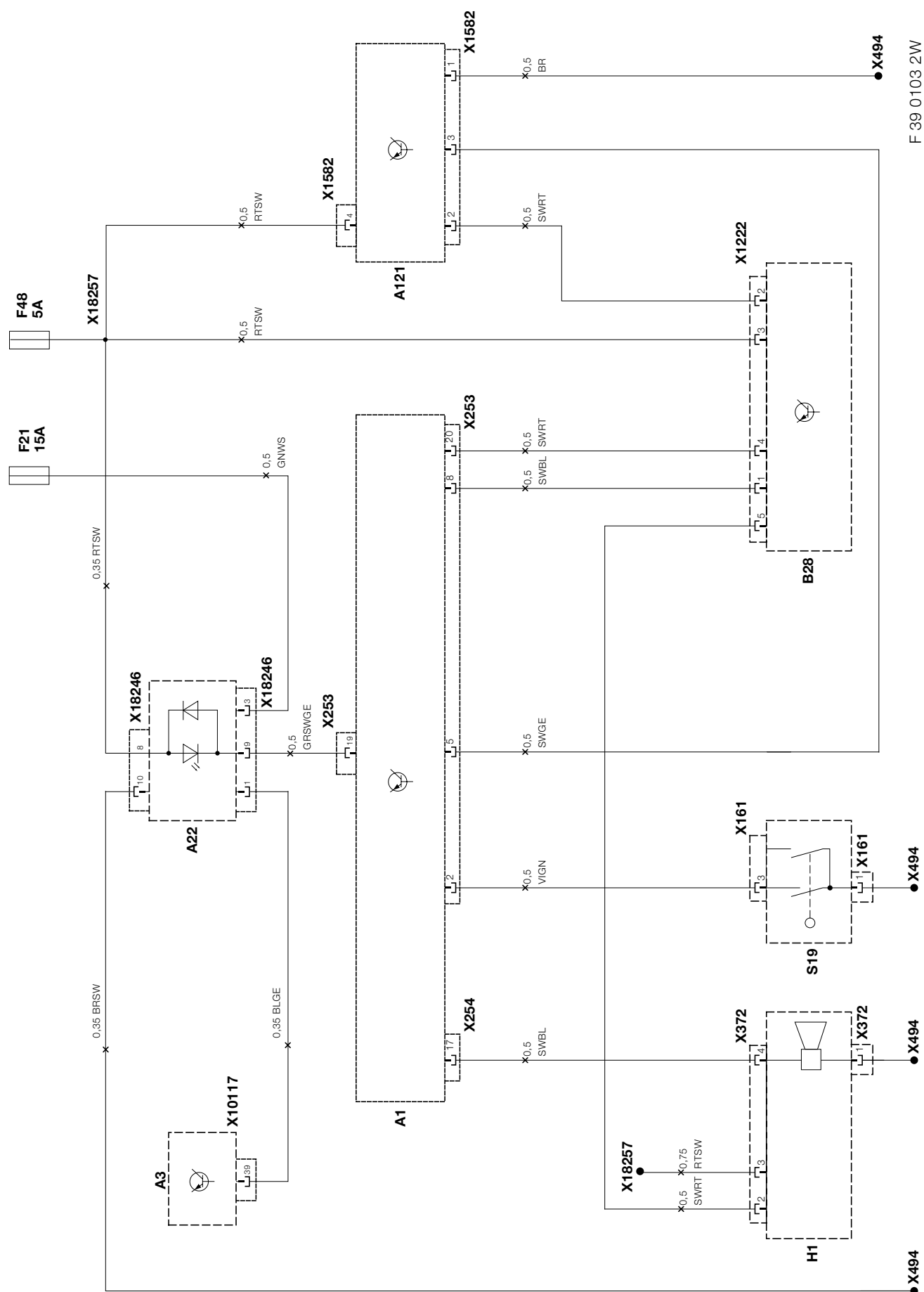


If the body electronics control module has been changed, a new coding of the ZKE (central body electronics) is required first. ◀

This retrofit package is coding-relevant and must be coded via the retrofit path sequence of instructions with MoDIC or DIS. Follow instructions on the terminal screen.

If the radio remote control has been retrofitted, when coding has been completed, initialise the new vehicle code (see installation instructions for radio remote control, E39 and vehicle owner's handbook).

8. Wiring diagram anti-theft alarm system (DWA) E 39



8. Wiring diagram anti-theft alarm system (DWA) E 39

Key		Cable colours	
A1	Body electronics control module	RT	red
A3	Light module	SW	black
A22	Inside rear view mirror	GN	green
A121	Ultrasound module	BR	brown
		GE	yellow
B28	Tilt alarm sensor	GR	grey
		WS	white
H1	Siren		
S19	Contact, bonnet		
X161	3-pole, black connector		
X253	26-pole, black connector		
X254	18-pole, black connector		
X372	4-pole, black connector		
X494	Joint connector, earth		
X1222	6-pole, black connector		
X1582	4-pole, black connector		
X10117	54-pole, black connector		
X18246	10-pole, black connector		
X18257	Connector, terminal 30		