

**Connector overview**

<b>Number</b>	<b>X-pin, color</b>	<b>Description</b>
X8680	10-pin, black	Connector Fuse carrier, engine electronics

**Pin assignments at connector X8680**

<b>Pin</b>	<b>Type</b>	<b>Description / Signal type</b>	<b>Connection / Measuring notes</b>
1	A	Terminal 30	Terminal 30 splice
2	A	Terminal 87	Terminal 30 splice
3	A	Terminal 15	Engine control module relay I
4	A	Terminal 87	Terminal 87 splice
5	A	Terminal 15	Engine control module relay I
6	A	Terminal 87	Terminal 87 splice
7	E	Terminal 30 voltage supply	Engine control module relay II
8	A	Terminal 30	Terminal 87 splice
9	A	Terminal 15	Unloader relay terminal 15
10	A	Terminal 15	Terminal 15 splice

## Connector overview

Number	X-pin, color	Description
X60101	9-pin, black	Connector Engine control module I (DME) Module 1
X60102	24-pin, black	Connector Engine control module I (DME) Module 2
X60103	52-pin, black	Connector Engine control module I (DME) Module 3
X60104	40-pin, black	Connector Engine control module I (DME) Module 4
X60105	9-pin, black	Connector Engine control module I (DME) Module 5

### Pin assignments at connector X60101

Pin	Type	Description / Signal type	Connection / Measuring notes
1		Not used	
2		Not used	
3	E/A	Communication line data link TXD	Data link connector
4	M	Ground wire	Ground splice
5		Not used	
6	M	Control module ground	Ground point
7	E	Terminal 30 voltage supply	Fuse carrier, engine electronics
8	E	Terminal 87	Fuse carrier, engine electronics
9		Not used	

Pin	Type	Description / Signal type	Connection / Measuring notes
1		Not used	
2		Not used	
3	E/A	CAN-bus low	Transmission control module (AGS)
4	E/A	CAN-bus high	Transmission control module (AGS)
5	M	Shield, CAN-bus	Transmission control module (AGS)
6		Not used	
7	A	Oxygen sensor heater signal	Heated oxygen sensor I behind catalytic converter
8	M	Heated oxygen sensor ground	Shield for heated oxygen sensor I behind catalytic converter
9	M	Heated oxygen sensor ground	Heated oxygen sensor I in front of catalytic converter
10	M	Heated oxygen sensor ground	Shield for heated oxygen sensor I in front of catalytic converter
11	M	Heated oxygen sensor ground	Heated oxygen sensor I behind catalytic converter
12		Not used	
13		Not used	

14		Not used	
15	E	Heated oxygen sensor signal	Heated oxygen sensor I in front of catalytic converter
16		Not used	
17	E	Heated oxygen sensor signal	Heated oxygen sensor I behind catalytic converter
18	A	Signal, running losses	Fuel changeover circuit
19	A	Oxygen sensor heater signal	Heated oxygen sensor I in front of catalytic converter
20		Not used	
21		Not used	
22		Not used	
23	A	Terminal 85 control	Engine control module relay I
24		Not used	

#### Pin assignments at connector X60103

Pin	Type	Description / Signal type	Connection / Measuring notes
1		Not used	
2	A	Injection signal	Cyl. 4 fuel injection valve

3	A	Signal Evaporative emission valve	Evaporative emission valve I
4		Not used	
5		Not used	
6	M	Ground for electronic components	Ground splice
7		Not used	
8		Not used	
9	M	Hot-film mass air flow sensor ground	Hot-film mass air flow sensor
10		Not used	
11		Not used	
12	E	Voltage signal, terminal 30h	Starter
13	E	Generator D+ (terminal 61) signal	Generator
14	A	Signal, changeover valve	Air-contained fuel injection valves, bank 1
15	A	Injection signal	Cyl. 2 fuel injection valve
16		Not used	
17		Not used	

18	E	Inertia fuel shutoff switch signal	Throttle position control module (EML)
19		Not used	
20	E	Camshaft position sensor signal	Hall effect camshaft position sensor
21	M	Ground	Dual temperature switch
22	E	Signal, coolant temperature	Dual temperature switch
23	E	Hot-film mass air flow sensor signal	Hot-film mass air flow sensor
24		Not used	
25		Not used	
26		Not used	
27	A	Injection signal	Cyl. 6 fuel injection valve
28	A	Injection signal	Cyl. 5 fuel injection valve
29		Not used	
30		Not used	
31	M	Negative activation	Characteristic map, cooling
32	E	Crankshaft position sensor signal	Crankshaft position/RPM sensor I

33		Not used	
34		Not used	
35		Not used	
36	E	Sensor 2 signal	Knock sensor
37	M	Shield, knock sensor	Knock sensor
38		Not used	
39	E	Oil level - thermal	Oil level sensor
40	A	Injection signal	Cyl. 3 fuel injection valve
41	A	Injection signal	Cyl. 1 fuel injection valve
42		Not used	
43		Not used	
44		Not used	
45	M	Ground	Shield for crankshaft position/RPM sensor I
46	E	Crankshaft position sensor signal	Crankshaft position/RPM sensor I
47		Not used	
48		Not used	

49	E	Sensor 1 signal	Knock sensor
50	M	Shield, knock sensor	Knock sensor
51		Not used	
52	M	Negative activation	Secondary air injection pump valve

#### Pin assignments at connector X60104

Pin	Type	Description / Signal type	Connection / Measuring notes
1	A	Charge indicator signal (terminal 61)	Instrument cluster
2	E	Voltage signal, terminal 30h	Integrated instrument cluster control module (IKE)
3	A	Power Secondary air injection pump	Secondary air injection pump
4	A	Power Auxiliary fan motor	Auxiliary fan motor
5		Not used	
6	E	Start signal terminal 50	Ignition switch
7		Not used	
8		Not used	
9		Not used	



10	A	Activation of relay for fuel pump (EKP)	Fuel pump relay
11		Not used	
12		Not used	
13		Not used	
14		Not used	
15		Not used	
16		Not used	
17	A	Engine speed signal output (TD)	Data link connector
18		Not used	
19		Not used	
20		Not used	
21	A	Washer fluid level, brake fluid level	Light module
22	E	RH rear engine speed signal	ABS/DSC control module
23		Not used	
24		Not used	

26	E	Voltage supply, terminal 15	Fuse F24
27		Not used	
28		Not used	
29	E	Compressor ON signal from engine control module (DME)	Heating and A/C control module
30	M	Negative activation	Leakage diagnosis pump
31		Not used	
32		Not used	
33	E/A	Communication link (EWS)	Electronic drive-away protection control unit (EWS)
34	A	Signal, leak diagnosis pump	Leakage diagnosis pump
35		Not used	
36	E/A	CAN-bus high	CAN star contact coupler
37	E/A	CAN-bus low	CAN star contact coupler
38	M	Ground	Temperature sensor
39	E	Signal	Temperature sensor

**Pin assignments at connector X60105**

<b>Pin</b>	<b>Type</b>	<b>Description / Signal type</b>	<b>Connection / Measuring notes</b>
1	E	Ignition current feedback	Cyl. 1 ignition coil
2		Not used	
3	A	Terminal 1 signal	Cyl. 1 ignition coil
4		Not used	
5	M	Ground	Ground point
6	A	Terminal 1 signal	Cyl. 1 ignition coil
7		Not used	
8		Not used	
9	A	Terminal 1 signal	Cyl. 1 ignition coil

## Connector overview

Number	X-pin, color	Description
X60201	9-pin, gray	Connector Engine control module II (DME) Module 1
X60202	24-pin, gray	Connector Engine control module II (DME) Module 2
X60203	52-pin, gray	Connector Engine control module II (DME) Module 3
X60204	40-pin, gray	Connector Engine control module II (DME) Module 4
X60205	9-pin, gray	Connector Engine control module II (DME) Module 5

### Pin assignments at connector X60201

Pin	Type	Description / Signal type	Connection / Measuring notes
1		Not used	
2		Not used	
3	E/A	Communication line data link TXD	Data link connector
4	M	Ground wire	Ground splice
5		Not used	
6	M	Control module ground	Ground point
7	E	Terminal 30 voltage supply	Fuse carrier, engine electronics
8	E	Terminal 30 voltage supply	Fuse carrier, engine electronics
9	E	Terminal 87	Fuse carrier, engine electronics

### Pin assignments at connector X60202

Pin	Type	Description /	Connection /
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1		Not used	
2		Not used	
3	E/A	CAN-bus low	
4	E/A	CAN-bus high	
5	M	Shield, CAN-bus	
6		Not used	
7	A	Oxygen sensor heater signal	Heated oxygen sensor II behind catalytic converter
8	M	Heated oxygen sensor ground	Shield for heated oxygen sensor II behind catalytic converter
9	M	Heated oxygen sensor ground	Heated oxygen sensor II in front of catalytic converter
10	M	Heated oxygen sensor ground	Shield for heated oxygen sensor II in front of catalytic converter
11	M	Heated oxygen sensor ground	Heated oxygen sensor II behind catalytic converter
12		Not used	
13		Not used	
14		Not used	

15	E	Heated oxygen sensor signal	Heated oxygen sensor II in front of catalytic converter
16		Not used	
17	E	Heated oxygen sensor signal	Heated oxygen sensor II behind catalytic converter
18		Not used	
19	A	Oxygen sensor heater signal	Heated oxygen sensor II in front of catalytic converter
20		Not used	
21		Not used	
22		Not used	
23	A	Terminal 85 control	Engine control module relay II
24		Not used	

#### Pin assignments at connector X60203

Pin	Type	Description / Signal type	Connection / Measuring notes
1		Not used	
2	A	Injection signal	Cyl. 10 fuel injection valve
3	A	Signal Evaporative emission valve	Evaporative emission valve II

4		Not used	
5		Not used	
6	M	Ground for electronic components	Ground splice
7		Not used	
8		Not used	
9	M	Hot-film mass air flow sensor ground	Hot-film mass air flow sensor
10		Not used	
11		Not used	
12		Not used	
13		Not used	
14	A	Signal, changeover valve	Air-contained fuel injection valves, bank 2
15	A	Injection signal	Cyl. 8 fuel injection valve
16		Not used	
17		Not used	
18	E	Inertia fuel shutoff switch signal	Throttle position control module

19	E	Control unit recognition	Ground splice
20	E	Camshaft position sensor signal	Hall effect camshaft position sensor
21		Not used	
22		Not used	
23	E	Hot-film mass air flow sensor signal	Hot-film mass air flow sensor
24		Not used	
25		Not used	
26		Not used	
27	A	Injection signal	Cyl. 12 fuel injection valve
28	A	Injection signal	Cyl. 11 fuel injection valve
29		Not used	
30		Not used	
31		Not used	
32	E	Crankshaft position sensor signal	Crankshaft position/RPM sensor II
33		Not used	



34	E	Intake air temperature	Intake air temperature sensor
35		Not used	
36	E	Signal, sensor 4	Knock sensor
37	M	Shield, knock sensor	Knock sensor
38		Not used	
39		Not used	
40	A	Injection signal	Cyl. 9 fuel injection valve
41	A	Injection signal	Cyl. 7 fuel injection valve
42		Not used	
43		Not used	
44		Not used	
45	M	Ground	Shield up to 10 mm before crankshaft position/RPM sensor II
46	E	Crankshaft position sensor signal	Crankshaft position/RPM sensor II
47	M	Ground	Intake air temperature sensor
48		Not used	

50	M	Shield, knock sensor	Knock sensor
51		Not used	
52		Not used	

**Pin assignments at connector X60204**

Pin	Type	Description / Signal type	Connection / Measuring notes
1		Not used	
2		Not used	
3		Not used	
4		Not used	
5		Not used	
6	E	Start signal terminal 50	Ignition switch
7		Not used	
8		Not used	
9		Not used	
10	A	Activation of relay for fuel pump (EKP)	Fuel pump relay

12		Not used	
13		Not used	
14		Not used	
15		Not used	
16		Not used	
17	A	Engine speed signal output (TD)	Data link connector
18		Not used	
19		Not used	
20		Not used	
21		Not used	
22	E	LH rear engine speed signal	ABS/DSC control module
23		Not used	
24		Not used	
25		Not used	
26	E	Voltage supply, terminal 15	Fuse F24

28		Not used	
29		Not used	
30		Not used	
31		Not used	
32		Not used	
33	E/A	Communication link (EWS)	Electronic drive-away protection control unit (EWS)
34		Not used	
35		Not used	
36	E/A	CAN-bus high	CAN star contact coupler
37	E/A	CAN-bus low	CAN star contact coupler
38		Not used	
39		Not used	
40	A	Start signal	Starter relay

**Pin assignments at connector X60205**

Pin	Type	Description / Signal type	Connection / Measuring notes
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2		Not used	
3	A	Terminal 1 signal	Cyl. 2 ignition coil
4		Not used	
5	M	Ground	Ground point
6	A	Terminal 1 signal	Cyl. 2 ignition coil
7		Not used	
8		Not used	
9	A	Terminal 1 signal	Cyl. 2 ignition coil

**Connector overview**

<b>Number</b>	<b>X-pin, color</b>	<b>Description</b>
X6004	88-pin, natural	Connector B Throttle position control module (EML)

**Pin assignments at connector X6004**

<b>Pin</b>	<b>Type</b>	<b>Description / Signal type</b>	<b>Connection / Measuring notes</b>
1	A	Cosine winding signal, terminal connection A	Cyl. 7 12 electronic throttle position actuator (EML)
2	A	Sine winding signal, terminal connection A	Cyl. 7 12 electronic throttle position actuator (EML)
3	A	Cosine winding signal, terminal connection A	Cyl. 7 12 electronic throttle position actuator (EML)
4	A	Sine winding signal, terminal connection B	Cyl. 7 12 electronic throttle position actuator (EML)
5		Not used	
6		Not used	
7		Not used	
8	M	Ground, potentiometer 2	Cyl. 7 12 electronic throttle position actuator (EML)
9	A	5 V signal, potentiometer 2	Cyl. 7 12 electronic throttle position actuator (EML)

			actuator (EML)
11	M	Ground, potentiometer 1	Cyl. 7 12 electronic throttle position actuator (EML)
12		Not used	
13		Not used	
14		Not used	
15		Not used	
16		Not used	
17		Not used	
18	M	Ground, potentiometer 2	Cyl. 1-6 electronic throttle position actuator (EML)
19	A	5 V signal, potentiometer 2	Cyl. 1-6 electronic throttle position actuator (EML)
20	A	5 V signal, potentiometer 1	Cyl. 1-6 electronic throttle position actuator (EML)
21	M	Ground, potentiometer 1	Cyl. 1-6 electronic throttle position actuator (EML)
22		Not used	
23	A	Sine winding signal, terminal	Cyl. 1-6 electronic throttle position

24	A	Cosine winding signal, terminal connection A	Cyl. 1-6 electronic throttle position actuator (EML)
25	A	Sine winding signal, terminal connection A	Cyl. 1-6 electronic throttle position actuator (EML)
26	E	Terminal 87	Engine control module relay II
27	A	Cosine winding signal, terminal connection B	Cyl. 1-6 electronic throttle position actuator (EML)
28	M	Ground	Ground splice
29	A	Cosine winding signal, terminal connection B	Cyl. 7 12 electronic throttle position actuator (EML)
30	A	Sine winding signal, terminal connection B	Cyl. 7 12 electronic throttle position actuator (EML)
31	A	Cosine winding signal, terminal connection B	Cyl. 7 12 electronic throttle position actuator (EML)
32	A	Sine winding signal, terminal connection A	Cyl. 7 12 electronic throttle position actuator (EML)
33		Not used	
34	M	Ground	Ground point
35		Not used	



			actuator (EML)
37	M	Shield, potentiometer 1	Cyl. 7 12 electronic throttle position actuator (EML)
38		Not used	
39		Not used	
40		Not used	
41		Not used	
42		Not used	
43		Not used	
44		Not used	
45		Not used	
46		Not used	
47	M	Shield, potentiometer 2	Cyl. 1-6 electronic throttle position actuator (EML)
48	M	Shield, potentiometer 1	Cyl. 1-6 electronic throttle position actuator (EML)
49		Not used	
50		Not used	

51	A	Sine winding signal, terminal connection A	Cyl. 1-6 electronic throttle position actuator (EML)
52	A	Cosine winding signal, terminal connection B	Cyl. 1-6 electronic throttle position actuator (EML)
53	A	Sine winding signal, terminal connection B	Cyl. 1-6 electronic throttle position actuator (EML)
54	E	Terminal 87	Engine control module relay II
55	A	Cosine winding signal, terminal connection A	Cyl. 1-6 electronic throttle position actuator (EML)
56	E/A	Inertia fuel shutoff switch signal	Engine control module II (DME)
57	E	Brake switch signal	Transmission control module (AGS)
58		Not used	
59	E	Kick-down switch signal	Kick-down switch
60		Not used	
61		Not used	
62		Not used	
63		Not used	
64		Not used	

65	E	Potentiometer 2 signal	Cyl. 7-12 electronic throttle position actuator (EML)
66	E	Potentiometer 1 signal	Cyl. 7-12 electronic throttle position actuator (EML)
67	A	Sensor 2 signal Oscillator output	Pedal position sensor
68	E	Sensor 2 signal Signal input	Pedal position sensor
69	M	Shield, sensor 2	Pedal position sensor
70	A	Sensor 3 signal Oscillator output	Pedal position sensor
71	E	Sensor 3 signal Signal input	Pedal position sensor
72	M	Shield, sensor 3	Pedal position sensor
73	A	Sensor 1 signal Oscillator output	Pedal position sensor
74	E	Sensor 1 signal Signal input	Pedal position sensor
75	M	Shield, sensor 1	Pedal position sensor
76	E	Potentiometer 2 signal	Cyl. 1-6 electronic throttle position actuator (EML)
77	E	Potentiometer 1 signal	Cyl. 1-6 electronic throttle position actuator (EML)
78		Not used	

80	E/A	Inertia fuel shutoff switch signal	Engine control module I (DME)
81	E	Multi-function steering wheel signal	Multifunction steering wheel
82		Not used	
83		Not used	
84	M	Shield, CAN-bus	Engine control module II (DME)
85	E/A	CAN-bus low	Engine control module II (DME)
86	E/A	CAN-bus high	Engine control module II (DME)
87		Not used	
88	E/A	Communication line data link TXD	Data link connector

**Connector overview**

<b>Number</b>	<b>X-pin, color</b>	<b>Description</b>
X10113	18-pin, natural	Connector 3 Integrated instrument cluster control module (IKE)
X10114	26-pin, blue	Connector 4 Integrated instrument cluster control module (IKE)

**Pin assignments at connector X10113**

<b>Pin</b>	<b>Type</b>	<b>Description / Signal type</b>	<b>Connection / Measuring notes</b>
1	E/A	Data link TXD	Data link connector
2		Not used	
3		Speed signal	Radio
4	A	Chime module activation	Chime module
5		Not used	
6		Activation, acoustic generator, tone 6	Chime module
7	A	K-bus signal line	K-bus splice
8	E/A	I/K-bus signal link	Connector, I/K-bus
9	M	Control module ground	Ground splice
10	M	Control module ground	Ground splice
11	A	Chime module tone 3 control	Chime module

12	E	Terminal R	Fuse F43
13	E	Steptronic signal Gear indicator	Transmission control module (AGS)
14	E	Ignition signal terminal 30h	Engine control module (DME) DDE control module
15	E	Terminal 30	Fuse F26
16	E	Terminal 15	Fuse F18
17	A	Chime module tone 2 control	Chime module
18	A	Chime module tone 1 control	Chime module

#### Pin assignments at connector X10114

Pin	Type	Description / Signal type	Connection / Measuring notes
1	E	LH rear engine speed signal	ABS/ASC control module
2		Not used	
3	E	Engine speed signal (TD)	Splice, engine speed (TD) signal
4	E	Brake pad wear indicator	Left front brake pad sensor
5	E	On-board computer remote control	Combination switch
6		Not used	

8	E/A	CAN-bus high	CAN link
9	E/A	CAN-bus low	CAN link
10		Not used	
11	E/A	CAN-bus	Integrated instrument cluster control module (IKE)
12	A	Analog ground, IKE sensor	Electrical fuel pump (EKP I)
13	E/A	Signal DDE control module	DDE control module
14	E	Outside temperature	Temperature sensor
15	E/A	Data link	Data link connector
16	A	Analog ground, IKE sensor	Fuel level sensor II
17		Not used	
18	A	Analog ground, IKE sensor	Dual temperature switch Diesel Dual temperature sensor
19	E	Engine coolant temperature	Dual temperature switch Diesel Dual temperature sensor
20	A	Analog ground, IKE sensor	Brake pad sensor
21		Not used	

22	A	Analog ground, IKE sensor	Temperature sensor
23	E	Fuel tank contents II	Fuel level sensor II
24	E/A	CAN-bus	Integrated instrument cluster control module (IKE)
25	E	Back-up light signal	Engine control module (DME) DDE control module
26		Not used	



## Connector overview

Number	X-pin, color	Description
X610	26-pin, blue	Connector 3 Heating and A/C control module
X611	18-pin, natural	Connector 4 Heating and A/C control module
X613	3-pin, natural	Connector 2 Heating and A/C control module
X614	3-pin, black	Connector Heating and A/C control module
X18153	3-pin, black	Connector 5 Heating and A/C control module
X18341	3-pin, black	Connector 0 Heating and A/C control module

### Pin assignments at connector X610

Pin	Type	Description / Signal type	Connection / Measuring notes
1	E	Voltage supply, terminal 15	Fuse F20
2	A	Signal, A/C compressor OFF (M51) A/C compressor signal	DDE control module Engine control module (DME) Digital diesel electronics control unit
3	A	Signal, A/C compressor ON (M51)	DDE control module
4	A	A/C system standby signal	DDE control module
5	A	Rear window defogger relay control	Rear defogger relay
6	A	Front defogger/washer jets relay control	Front defogger/washer jets relay
7	E	Pressure signal	High pressure switch

8	A	Blower control voltage	Final stage unit
9		Not used	
10	M	Circulation (AUC) heater component ground	Automatic air recirculation sensor
11	M	Ground High pressure switch	High pressure switch
12	E	Consumer cut-off signal	General module
13		Not used	
14	A	Auxiliary water pump control	Auxiliary water pump
15	A	Blower relay control	Blower relay
16		Not used	
17	A	Auxiliary fan normal speed relay control	Auxiliary fan normal speed relay
18	E	Nighttime illumination signal	Terminal 58g splice
19	E/A	K-bus signal line	K-bus splice
20	A	Left water valve control	Water valve assembly, Left valve
21	A	Right water valve control	Water valve assembly, Right valve
22	A	Power High pressure switch	High pressure switch

24	E	Negative activation	Automatic air recirculation sensor
25	A	Circulation (AUC) heating control	Automatic air recirculation sensor
26		Not used	

### Pin assignments at connector X611

Pin	Type	Description / Signal type	Connection / Measuring notes
1	E	Actuating signal	Fresh air flap motor
2	A	Actuating signal	Fresh air flap motor
3	A	Actuating signal	Fresh air flap motor
4	E	Actuating signal	Fresh air flap motor
5	E	Mixing air actuator desired value	Rear mixing actuator
6	A	Sensors (+)	Mixing actuator/Rear mixing actuator
7	E	Mixing air actuator desired value	Mixing actuator
8	E	Sensor signal	Right ventilation sensor
9	E	Sensor signal	Left ventilation sensor
10	E	Ventilation ON signal	Rear ventilation switch

12		Not used	
13		Not used	
14	M	Component ground	Sensor and actuator
15	E	Sensor signal	Evaporator temperature sensor
16	E	Sensor signal	RH heat exchanger temperature sensor
17	E	Sensor signal	LH heat exchanger temperature sensor
18		Not used	

#### Pin assignments at connector X613

Pin	Type	Description / Signal type	Connection / Measuring notes
1	A	Control voltage	Left actuator motors and recirculated air
2	M	Actuator motors ground	Left actuator motors and recirculated air
3	E/A	MI-bus	Left actuator motors and recirculated air

#### Pin assignments at connector X614

Pin	Type	Description /	Connection /
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1	A	Control voltage	Right actuator motors and defrosting
2	M	Actuator motors ground	Right actuator motors and defrosting
3	E/A	MI-bus	Left actuator motors and recirculated air

#### Pin assignments at connector X18153

Pin	Type	Description / Signal type	Connection / Measuring notes
1	A	Park heating ON signal	up to 08/1995 Park heating/ventilation control module as of 09/1995 Receiver, independent heating
2	A	Control voltage	Solenoid valve 2 park heating/ventilation
3	E	Park heating ON feedback signal	Park heating/ventilation control module

#### Pin assignments at connector X18341

Pin	Type	Description / Signal type	Connection / Measuring notes
1	A	Magnetic clutch voltage supply	High pressure switch (M51) Heating and A/C control module
2	E	Terminal 30 voltage supply	Fuse F11
3	M	Ground	Ground X492

### Connector overview

Number	X-pin, color	Description
X33	11-pin, black	Connector Ignition switch

### Pin assignments at connector X33

Pin	Type	Description / Signal type	Connection / Measuring notes
1	A	Signal Terminal 15	Unloader relay terminal 15
2	A	Terminal 30 voltage supply	Supply, fuses F40 to F48
3	A	Terminal 30 voltage supply	Power, fuses F18 to F24
4		Not used	
5	E	Terminal 30 voltage supply	Cable shoe Fuse F114
6	E	Terminal 30 voltage supply	Cable shoe Fuse F111
7	E	Terminal 30 voltage supply	Cable shoe Fuse F111
8	A	Terminal 50 signal	Engine control module (DME) M62/M73 Electronic drive-away protection control unit (EWS)
9		Not used	
10	A	Terminal 30 voltage supply	Fuse F36
11		Not used	

**Connector overview**

<b>Number</b>	<b>X-pin, color</b>	<b>Description</b>
X12	15-pin, black	Connector Light module
X38	15-pin, white	Connector Light module
X10117	54-pin, black	Connector Light module

**Pin assignments at connector X12**

<b>Pin</b>	<b>Type</b>	<b>Description / Signal type</b>	<b>Connection / Measuring notes</b>
1	A	Right rear fog light	Right rear light assembly I
2	A	Left tail light	Left rear light assembly I
3	A	Right front turn light	Right front turn signal lamp
4	A	Right fog light	Right fog light
5	A	Left license plate light	Left license plate light
6	A	Right front turn light	Right front turn signal lamp
7	M	Control module ground	Ground point
8	A	Rear left turn light	Left rear light assembly I
9	A	Left brake light	Left rear light assembly I
10	A	Center brake light	High level stop light

12	A	Right license plate light	Right license plate light
13	A	Right high beam light	Right high beam
14	A	Right front turn light	Right front auxiliary turn light
15	E	Terminal 30 voltage supply	Fuse F6

### Pin assignments at connector X38

Pin	Type	Description / Signal type	Connection / Measuring notes
1	A	Nighttime illumination signal line	Terminal 58 splice
2	M	Control module ground	Clutch signal
3	A	Right low beam light	Low beam light, right
4	A	Left front turn light	Left front auxiliary turn light
5	A	Left tail light	Left rear light assembly I
6	A	Left high beam light	Left high beam
7	A	Left fog light	Left fog light
8	E	Terminal 30 voltage supply	Fuse F113
9	A	Left back-up light	Left rear light assembly I
10	A	Right back-up light	Right rear light assembly I



11	A	Left front turn light	Left front turn signal lamp
12	A	LH rear turn light	Right rear light assembly I
13	A	Right tail light	Right rear light assembly I
14	A	Right brake light	Right rear light assembly I
15	A	Left rear fog light	Left rear light assembly I

### Pin assignments at connector X10117

Pin	Type	Description / Signal type	Connection / Measuring notes
1	A	Illumination switch	Light switch
2	A	Signal, headlight vertical aim control	Actuator for headlight beam throw control, left
3	A	Signal, headlight vertical aim control	Actuator for headlight beam throw control, left
4	A	Signal, headlight vertical aim control	Actuator for headlight beam throw control, left
5	A	Signal, headlight vertical aim control	Actuator for headlight beam throw control, left
6	E	Seat belt signal	Driver's air bag
7	E	Hazard lights ON signal	Hazard switch

9		Not used	
10	E	Washer fluid level	Washer fluid level switch
11		Not used	
12	A	Warning lamp preheating/diagnostic trouble code	DDE control module
13	E	Voltage supply terminal R	Fuse F44
14		Not used	
15	E	Oil level - thermal	Engine control module (DME) DDE control module
16	E	Dimmer signal	Dimmer
17	A	Right tail light	Right rear light assembly I
18	A	LH front park light	Left front turn signal lamp
19	A	Hazard switch illumination	Hazard switch
20	A	Signal, headlight vertical aim control	Actuator for headlight beam throw control, right
21	A	Signal, headlight vertical aim control	Actuator for headlight beam throw control, right

		control	control, right
23	A	Signal, headlight vertical aim control	Actuator for headlight beam throw control, right
24	E	Engine coolant level	Engine coolant level switch
25	E	Brake light signal	Brake light switch
26	A	Back up signal	Chime module
27	A	Headlight widening control module power	Headlight widening control module
28		Not used	
29		Not used	
30	E	Right turn light signal	Combination switch
31	E	Terminal 15	Fuse F23
32	E	Left turn light signal	Combination switch
33	E	Headlights ON signal	Light switch
34	E	Signal Headlight widening adjustment	Headlight widening potentiometer
35		Not used	
		I/K-bus signal link	Connector, I/K-bus

37		Not used	
38	E	Back up signal	Navigation control module
39	E	Back up signal	Electrochromic rear view mirror
40		Not used	
41	E	Brake fluid level	Brake fluid level switch ABS/DSC control module
42		Not used	
43	E	Headlight flash signal	Combination switch
44		Not used	
45	E	Rear fog light ON signal	Fog light switch
46		Not used	
47		Not used	
48		Not used	
49		Not used	
50	E	High beam ON signal	Combination switch
51	E	Park light ON signal	Light switch

53	E	Signal Headlight widening adjustment	Headlight widening potentiometer
54	A	Terminal 58 illumination	Electronic shock absorber control module (EDC)

**Connector overview**

<b>Number</b>	<b>X-pin, color</b>	<b>Description</b>
X1659	13-pin, black	Connector Electronic drive-away protection control unit (EWS)

**Pin assignments at connector X1659**

<b>Pin</b>	<b>Type</b>	<b>Description / Signal type</b>	<b>Connection / Measuring notes</b>
1	A	Terminal 50	Engine connector I M62/M73 Starter relay
2	E	Terminal 50	Ignition switch M62/M73 Fuse F114
3		Not used	
4	A	Drive-away protection control	Engine control module (DME) Digital diesel electronics control unit DDE control module
5	E	Signal, ring coil ignition lock	Ring coil
6	E	Transmission range switch position L2 signal	AGS transmission control module modular Transmission control module (AGS)
7		Not used	
8	A	Transmission range switch position L2 signal	Starter relay
9	E	Terminal 31	Terminal 31 splice

11	E	Terminal R	Fuse F44
12	E	Signal, ring coil ignition lock	Ring coil
13	E/A	K-bus signal line	Splice, K-bus X10116

Connector overview

Number	X-pin, color	Description
X20	12-pin, Natural	Engine connector I

Pin assignments at connector X20

Pin	Description	B: Socket housing S: Pin housing
1	Terminal 15	B: Unloader relay terminal 15 S: Ignition switch
2	Not used	B: S:
3	Start signal terminal 50	B: Starter S: Starter relay
4	Data link TXD	B: Data link connector S: Engine control module II (DME)
5	Data link RXD	B: Data link connector S: Electronic shock absorber control module (EDC)
6	Terminal 15	B: Automatic transmission range switch S: Fuse F22
7	Terminal 87	B: Engine control module relay II S: Fuse F17
8	Terminal 54	B: Transmission control module (AGS) S: Brake light switch
9	Signal, running losses	B: Engine control module I (DME) S: Fuel changeover circuit
10	Outside temperature sensor signal (positive)	B: Dual temperature switch S: Integrated instrument cluster



11		Outside temperature sensor signal (negative)	B: Dual temperature switch
			S: Integrated instrument cluster control module (IKE)
12		Terminal 54	B: Throttle position control module (EML)
			S: Brake light switch

**Connector overview**

<b>Number</b>	<b>X-number of pins</b>	<b>Description</b>
X25	18	Engine connector IV

**Pin assignments at in-line connector X25**

<b>Pin</b>	<b>Description</b>	<b>B: Socket housing S: Pin housing</b>
1	Ground	B: Ground splice
		S: Pedal position sensor
2	Pedal position sensor 1 signal	B: DDE control module
		S: Pedal position sensor
3	Pedal position sensor 2 signal	B: DDE control module
		S: Pedal position sensor
4	Pedal position sensor 3 signal	B: DDE control module
		S: Pedal position sensor
5	Ground	B: Ground splice
		S: Pedal position sensor
6	Warning lamp preheating/diagnostic trouble code	B: DDE control module
		S: Light module
7	Not used	
8	Not used	
9	Not used	
10	Not used	
11	Not used	
12	Multi-function steering wheel	B: DDE control module

			S: Multifunction steering wheel control module
13		Not used	
14		Cruise control ON/OFF Signal	B: DDE control module
			S: Cruise control switch
15		Standby indicator signal	B: DDE control module
			S: Instrument cluster
16		Not used	
17		Not used	
18		Not used	

**Connector overview**

<b>Number</b>	<b>X-pin, color</b>	<b>Description</b>
X21	18-pin, Black	Engine connector III

**Pin assignments at connector X21**

<b>Pin</b>	<b>Description</b>	<b>B: Socket housing S: Pin housing</b>
1	Not used	B: S:
2	Not used	B: S:
3	Not used	B: S:
4	Not used	B: S:
5	Transmission position indicator signal	B: Integrated instrument cluster control module (IKE) S: Transmission control module (AGS)
6	Solenoid valves +	B: Park/neutral position switch S: Transmission control module (AGS)
7	Solenoid valves	B: Park/neutral position switch S: Transmission control module (AGS)
8	Not used	B: S:
9	Not used	B: S:
10	Steptronic signal, upshift	B: Steptronic switch S: Transmission control module

11		Steptronic signal, back	B: Steptronic switch
			S: Transmission control module (AGS)
12		Transmission range switch position L2 signal	B: Electronic drive-away protection control unit (EWS)
			S: Transmission control module (AGS)
13		Illumination switch panel signal	B: Transmission range indicator light
			S: Transmission control module (AGS)
14		Not used	B:
			S:
15		Transmission range switch position L5 signal	B: Program switch
			S: Transmission control module (AGS)
16		Transmission range switch position L6 signal	B: Program switch
			S: Transmission control module (AGS)
17		Not used	B:
			S:
18		Kick-down switch signal	B: Kick-down switch
			S: Throttle position control module (EML)

## Connector overview

Number	X-pin, color	Description
X70001	9-pin, blue	Connector AGS transmission control module Module 1
X70003	52-pin, blue	Connector AGS transmission control module Module 3
X70004	40-pin, blue	Connector AGS transmission control module Module 4

### Pin assignments at connector X70001

Pin	Type	Description / Signal type	Connection / Measuring notes
1	E	Voltage supply, terminal 15	Fuse F22
2		Not used	
3	E	Programming voltage	Data link connector
4	M	Ground	Ground splice
5	M	Ground	Ground point
6	M	Ground	Ground point
7	E	Terminal 30 voltage supply	Fuse F1
8	E	EGS terminal 87 voltage supply	Fuse F4
9	E	EGS terminal 87 voltage supply	Fuse F4

### Pin assignments at connector X70003

Pin	Type	Description / Signal type	Connection / Measuring notes
2	A	Power P/N lock magnet	Park/neutral position switch

3	E	Transmission range switch position L2 signal	Electronic drive-away protection control unit (EWS)
4		Not used	
5		Not used	
6		Not used	
7		Not used	
8		Not used	
9	E	Transmission range switch position L6 signal	Program switch
10	E	Transmission range switch position L5 signal	Program switch
11		Not used	
12		Not used	
13		Not used	
14		Not used	
15		Not used	
16		Not used	
17		Not used	

18	A	Transmission position indicator signal	Transmission range indicator light
19	E	Steptronic signal, upshift	Steptronic switch
20	E	Steptronic signal, back	Steptronic switch
21		Not used	
22		Not used	
23		Not used	
24		Not used	
25		Not used	
26		Not used	
27		Not used	
28		Not used	
29		Not used	
30		Not used	
31		Not used	
32		Not used	



34		Not used	
35		Not used	
36		Not used	
37		Not used	
38		Not used	
39		Not used	
40		Not used	
41		Not used	
42		Not used	
43		Not used	
44		Not used	
45		Not used	
46		Not used	
47		Not used	
48		Not used	

50		Not used	
51		Not used	
52		Not used	

**Pin assignments at connector X70004**

<b>Pin</b>	<b>Type</b>	<b>Description / Signal type</b>	<b>Connection / Measuring notes</b>
2	M	Shield	Shield up to 10mm before transmission
3	M	Turbine speed sensor (-)	Transmission control unit
4	E	Transmission range switch position L4	Automatic transmission range switch
5	M	Turbine speed shield (-)	Shield up to 10mm before transmission
6	A	Electric pressure actuator EDS5	Transmission control unit
7	A	Electric pressure actuator EDS4	Transmission control unit
8		Not used	
9		Not used	
10		Not used	

12	M	Transmission oil temperature sensor ground (-)	Transmission control unit
13	A	Turbine speed sensor (+)	Transmission control unit
14	E	Transmission range switch position L3	Automatic transmission range switch
15		Not used	
16	A	Solenoid valve 3	Transmission control unit
17	A	Electric pressure actuator EDS3	Transmission control unit
18		Not used	
19		Not used	
20		Not used	
21	A	Positive supply, EDS, MV1	Transmission control unit
22	E	Oil temperature signal	Transmission control unit
23	A	Turbine speed sensor (+)	Transmission control unit
24	E	Transmission range switch position L2	Automatic transmission range switch
25		Not used	

26	A	Solenoid valve 2	Transmission control unit
27	A	Electric pressure actuator EDS2	Transmission control unit
28	A	Electric pressure actuator EDS1	Transmission control unit
29		Not used	
30		Not used	
31	E	Terminal 15	Automatic transmission range switch
32	A	Communication line data link TXD	Engine control module (DME)
33	M	Output speed sensor (-)	Transmission control unit
34	E	Transmission range switch position L1	Automatic transmission range switch
35		Not used	
36	E/A	CAN-bus high	Engine control module (DME)
37	E/A	CAN-bus low	Engine control module (DME)
38	A	Solenoid valve 1	Transmission control unit
39		Not used	
40		Not used	

**Connector overview**

<b>Number</b>	<b>X-pin, color</b>	<b>Description</b>
X253	26-pin, black	Connector B General module
X254	20-pin, black	Connector C General module
X332	26-pin, black	Connector A General module

**Pin assignments at connector X253**

<b>Pin</b>	<b>Type</b>	<b>Description / Signal type</b>	<b>Connection / Measuring notes</b>
1		Not used	
2	A	Engine hood signal	Saloon only Underhood light switch
3		Not used	
4	A	Interface signal RDC/DWA	RDC control module
5	A	Interior protection	Saloon only Interior protection control module
6		Not used	
7		Not used	
8	A	Vehicle tilt signal	Saloon only Tilt sensor
9		Not used	
10	A	Trunk lid open signal	Trunk lid locking switch Trunk lid

11	A	Trunk lid open signal	Trunk lid release switch (interior)
12	A	Pressure-sensitive finger guard system signal	Left rear window pressure-sensitive finger guard right-hand drive Right rear window pressure-sensitive finger guard
13	A	Crash signal	Supplemental restraint system control module
14		Not used	
15	E	Wiper control I	Wiper relay
16	E	Wiper control II	Wiper relay
17	A	Headlight wash control	Headlight washer module
18	A	Intensive wash control	Headlight washer module
19	E	LED control	Anti-theft LED indicator (DWA)
20	A	Tilt signal	Tilt sensor
21		Not used	
22	E	Relay Unlock trunk lid	Relay for rear lid motor
23	E	Speed signal	Integrated instrument cluster control module (IKE) Instrument cluster

		system signal	sensitive finger guard right-hand drive Left rear window pressure- sensitive finger guard
25	A	Intermittent wiper voltage supply	Rear window wiper switch
26	M	Terminal 31	Ground splice

#### Pin assignments at connector X254

Pin	Type	Description / Signal type	Connection / Measuring notes
1	M	Terminal 31 Ground wire	Ground splice
2	A	Open window signal	Left rear window motor right-hand drive Right rear window motor
3	A	Engine Unlock trunk lid	ZV drive rear lid Touring Trunk lid servo motor
4	E	Terminal 30	Fuse F29
5	A	Open window signal	Right rear window motor right-hand drive Left rear window motor
6	A	Lock signal	Rear doors/tank access flap central locking motors
7		Not used	
8	M	Terminal 31	Clutch signal
9	A	Servotronic control	Electro-hydraulic converter

10	E	Terminal 30	Fuse F6
11	A	Servotronic control	Electro-hydraulic converter (Servotronic)
12	A	Close window signal	Left rear window motor right-hand drive Right rear window motor
13	A	Central arrest signal	Rear doors central locking motors
14	A	Unlock signal	Rear doors/tank access flap central locking motors
15	A	Close window signal	Right rear window motor right-hand drive Left rear window motor
16		Not used	
17	A	Horn signal	Anti-theft horn (DWA)
18	A	Pump signal	Washer pump
19	A	Consumer cut-off signal	Consumer cut-off splice
20	A	Interior lights signal	Interior lights splice

#### Pin assignments at connector X332

Pin	Type	Description / Signal type	Connection / Measuring notes
1	E	Terminal 30	Fuse F55



2	E	Interior lights signal	Interior/reading lamp, front
3	E	Windshield wash signal	Rear window wiper switch
4	E	Windshield wipe signal 2	Rear window wiper switch
5	E	Windshield wipe signal 1	Rear window wiper switch
6	E	Door contact signal	Rear right door jamb switch right-hand drive Left rear door jamb switch
7	E	Door contact signal	Left rear door jamb switch right-hand drive Rear right door jamb switch
8		Not used	
9	E	Unlock signal	Lift gate lock switch
10	A	Intensive wash control	Headlight washer module
11	E	Trunk lid closed signal	ZV drive rear lid
12	E/A	K-bus signal line	K-bus splice
13	E	Central locking signal	Electrochromic rear view mirror Central locking remote control
14	M	Ground	Ground splice
15	E	Close window signal	LH rear power window switch right-hand drive RH rear power window

16	E	Intensive wash signal	Rear window wiper switch
17	E	Open window signal	RH rear power window switch right-hand drive LH rear power window switch
18	E	Close window signal	RH rear power window switch right-hand drive LH rear power window switch
19	E	Soft-close automatic unlock signal	Soft close trunk lid motor assembly
20	E	Wipers in motion signal	Wiper motor
21		Not used	
22	E	Locked signal	Lift gate lock switch
23	E	Terminal R	Fuse F41
24	E	Close signal	Global locking switch
25	E/A	P-bus signal line	P-bus splice
26	E	Open window signal	LH rear power window switch right-hand drive RH rear power window switch

3	E	Illumination switch panel signal	Transmission range indicator light

### Connector overview

Number	X-pin, color	Description
X1746	42-pin, natural	Connector ABS/DSC control module

### Pin assignments at connector X1746

Pin	Type	Description / Signal type	Connection / Measuring notes
1	M	Ground	Ground point
2	E	Terminal 30	Fuse F108
3	E	Power Precharge pump, positive	Precharge pump
4	A	Signal Precharge pump, negative	Precharge pump
5	M	Ground	Ground point
6	E	Terminal 30	Fuse F33
7		Not used	
8	A	Signal rpm rate sensor	rpm rate sensor
9	A	Signal rpm rate sensor	rpm rate sensor
10	A	Signal rpm rate sensor	rpm rate sensor
11	E/A	Diagnosis signal TXD	Splice TXD
12	A	Signal Left front speed sensor	Left front speed sensor

13	A	Power Left rear speed sensor	Left rear speed sensor
14		Not used	
15	A	Power Right front speed sensor	Right front speed sensor
16	A	Signal Right front speed sensor	Right front speed sensor
17	E	Malfunction indicator lamp signal	Instrument cluster
18		Signal Right front speed sensor	Connector, front right speed sensor
19	A	Signal Right rear speed sensor	Engine control module (DME)
20		Not used	
21	A	Signal rpm rate sensor	rpm rate sensor
22		Not used	
23	E	Signal, terminal 87	Fuse F17
24	E/A	CAN-bus high	CAN LOW connector
25	M	Ground Pressure sensor	Pressure sensor
26	A	Signal Pressure sensor	Pressure sensor
27	E	ASC passive sensor signal	Switching centre
28	A	Power Left front speed sensor	Left front speed sensor

30	A	Power Right rear speed sensor	Right rear speed sensor
31	A	Signal Right rear speed sensor	Right rear speed sensor
32	E	Brake light signal	Brake light signal splice
33		Not used	
34	A	Signal Left rear speed sensor	Connector, rear left speed sensor
35	A	Signal Left front speed sensor	Connector, front left speed sensor
36	E	Signal Brake fluid level	Brake fluid level switch
37		Not used	
38		Not used	
39	E	Signal rpm rate sensor	rpm rate sensor
40	E/A	CAN-bus low	CAN HIGH connector
41	E	Signal rpm rate sensor	rpm rate sensor
42	A	Power Pressure sensor	Pressure sensor

## Connector overview

Number	X-pin, color	Description
X16	18-pin, black	Connector Instrument cluster

### Pin assignments at connector X16

Pin	Type	Description / Signal type	Connection / Measuring notes
1	M	Control module ground	Ground splice
2		Not used	
3	E	Charge indicator signal (terminal 61)	Splice, terminal 61 X213
4	E	Oil pressure indicator	Oil pressure switch Without oil pressure switch DME/DDE control unit Engine control module (DME)
5	E	Park brake indicator	Park brake switch
6		Not used	
7	E	Terminal 30	Fuse F26
8	E	Nighttime illumination signal	Light module
9		Not used	
10		Not used	
11		Not used	

12	A	Cruise control signal	DDE control module
13	A	Air bag indicator	Supplemental restraint system control module
14		Not used	
15	A	ABS malfunction indicator lamp	ABS/DSC control module ABS/ASC control module
16		Not used	
17	E	Terminal 15	Fuse F23
18		Not used	



## Connector overview

Number	X-pin, color	Description
X1869	23-pin, black	Connector Switching centre

### Pin assignments at connector X1869

Pin	Type	Description / Signal type	Connection / Measuring notes
1	A	Signal, seat heating on	Heated seats
2	E	Voltage supply, terminal 15	Fuse F17
3	E	Signal, terminal 58g	Terminal 58g splice
4	E	Signal Electronic shock absorber control module (EDC)	Electronic shock absorber control module (EDC)
5	E	Signal Electronic shock absorber control module (EDC)	Electronic shock absorber control module (EDC)
6	E	Voltage supply, terminal 15	Fuse F65
7	E	Terminal 30 voltage supply	Fuse F39
8	E	Indicator lamp, park distance control	Park distance control module
9	A	Park distance control ON/OFF	Park distance control module
10	A	Passenger's seat	Control unit, front passenger's active seat

12	A	Seat heating signal	Heated seats
13	A	Signal, seat heating on	Heated seats
14	A	Signal, sun blind Up	Sun blind motor
15	A	Signal, sun blind Down	Sun blind motor
16	A	ASC passive sensor signal Signal, DSC passive button	ABS/ASC control module ABS/DSC control module
17		Not used	
18		Not used	
19	M	Ground	Ground splice
20	A	Signal, sun blind	Sun blind remote control switch
21	E/A	K-bus signal line	K-bus splice
22	A	Seat heating signal	Heated seats
23	E	Voltage supply terminal R	Fuse F48