

# Section 3 Electrical system

## Group 31 Battery

System voltage ..... 12 V

Ground connection.....Negative terminal

### Battery capacity

Volvo P/N	Cold start current*	Reserve capacity*	Recommended charge current
	CCA SAE	RC SAE (DIN)	
35 15 230, 35 15 893	440	85 (50Ah)	4 A
35 15 895, 35 15 231	520	100 (60Ah)	5 A
35 15 897, 35 15 232	600	125 (70Ah)	6 A

Cold start current (CCA, SAE) is the discharge current which a battery can supply for 30 seconds at a temperature of  $-18^{\circ}\text{C}$  ( $0^{\circ}\text{F}$ ) without falling below 7.2 V.

Reserve capacity(RC, SAE) is the time it takes at a temperature of  $+27^{\circ}\text{C}$  ( $81^{\circ}\text{F}$ ), with a discharge current of 25 A, to reduce the voltage of a fully-charged battery to 10.5 V.

# Group 32 Generators

## Generators

Type	Bosch K1 14V 55 A 20	Bosch K1 14V 65 A 20	Bosch N1 14V 31/80 A	Bosch N1 14V 34/90 A
Manuf. P/N.....	0 120 488 131 - 260	0 120 488 230 - 231 - 262	0 120 469 787 - 789 - 793 - 935 - 995 - 993 - 997	0 120 469 916
Nominal current.....A	55	65	80	80
Nominal output.....W	770	910	1120	1120
Max. speed.....r/s(rpm)	250(15000)	250(15000)	250(15000)	250(15000)
Diameter, slip rings,				
new .....mm	28.0	28.0	28.0	28.0
min. ....mm	26.8	26.8	26.8	26.8
Max. permitted radial runout				
slip rings.....mm	0.03	0.03	0.03	0.03
rotor body .....mm	0.05	0.05	0.05	0.05
Brushes,				
spring force..... N(kp)	3-4(0.3-0.4)	3-4(0.3-0.4)	3-4(0.3-0.4)	3-4(0.3-0.4)
min. length.....mm	5	5	5	5
Tightening torque				
attachment screws .Nm(ft lb)	4 (3)	4 (3)	4 (3)	4 (3)
pulley nut.....Nm(ft lb)	40(30)	45-55(33-40)	45-55(33-40)	45-55(33-40)
<b>Test values</b>				
Resistance,				
rotor winding ..... Ω	3.4-3.7	2.8 ± 10%	2.9	2.9
stator winding..... Ω	0.14-0.15*	0.1 ± 10%*	0.09*	0.09*
Amperage at 14V				
(min. value) .....A at r/s (rpm)	36/33.3(2000)	23/25(1500)	31/25(1500)	31/25(1500)
.....A at r/s (rpm)	47/50.0(3000)	44/35(2100)	80/100(6000)	90/100(6000)
.....A at r/s (rpm)	52/66.7(4000)	65/100(6000)		

\* /phase. A low-range ohmmeter should be used.

## Generators

Type	Bosch N1 14V 31/100 A	Bosch NC 14V 55/100 A	Bosch NC 14V 60/120 A
Manuf. P/N.....	0 120 468 010 -016	0 120 465 018 0 123 213 007 0 123 545 002	0 120 465 006 0 120 510 348 0 123 545 003
Nominal current .....A	100	100	120
Nominal output.....W	1400	1400	1680
Max. speed.....r/s(rpm)	250(15000)	300(18000)	300(18000)
Diameter, slip rings,			
new .....mm	28.0	15.0	15.0
min. ....mm	27.0	14.0	14.0
Max. permitted radial runout			
slip rings.....mm	0.03	0.03	0.03
rotor body .....mm	0.05	0.03	0.05
Brushes,			
spring force..... N(kp)	3-4(0.3-0.4)	3-5(0.3-0.5)	3-5(0.3-0.5)
min. length .....mm	5	5	5
Tightening torque			
attachment screws .Nm(ft lb)	4 (3)	4(3)	4 (3)
pulley nut .....Nm(ft lb)	45-55(33-40)	45-55(33-40)	45-55(33-40)
<b>Test values</b>			
Resistance,			
rotor winding ..... $\Omega$	2.6	2.6	2.6
stator winding..... $\Omega$	0.05*	0.03*	0.02*
Amperage at 14V			
(min. value) .....A at r/s (rpm)	31/25(1500)	55/30(1800)	60/30(1800)
.....A at r/s (rpm)	100/100(6000)	100/100(6000)	120/100(6000)

\* /phase. A low-range ohmmeter should be used.

## Generators

Type	NipponDenso 14V 80 A	NipponDenso 14V 100 A	
Manuf. P/N.....	100 211-8370	100 211-8620 100 211-8630	
Max. current .....A	80	100	
Max. output.....W	1120	1400	
Max. speed.....r/s(rpm)	300(18000)	300(18000)	
Diameter, slip rings, new .....mm	14.4	14.4	
min. ....mm	12.8	12.8	
Brushes, spring force, max/min .....N	3.23/1.37	3.23/1.37	
min. length .....mm	1.5	1.5	
Tightening torque attachment screws ..... Nm(ft lb)	4.5(3.3)	4.5(3.3)	
pulley nut ..... Nm(ft lb)	115(85)	115(85)	
<b>Test values</b>			
Resistance, rotor winding ..... $\Omega$	2.9	2.3	
stator winding..... $\Omega$	0.04*	0.03*	
Amperage at 13.5V (min. value) ..... A at r/s (rpm)	52/33.3 (2000) 80/83 (5000) 86/100 (6000)	55/3.33 (2000) 100/83 (5000) 108/100 (6000)	

\* /phase. A low-range ohmmeter should be used.

## Charge regulator

Make	Bosch		NipponDenso	
Manuf. P/N	0 197 311 022 -232, -234, -239		126 000-1130 126 000-1320	
<b>Conditions</b>	*	**	*	**
Battery charge .....	75	100	75	100
Air temperature .....	+ 25		+ 25	
Temperature, warm regulator .....	+ 60 - 80		+ 60 - 80	
<b>Test values</b>				
Generator speed.....	100(6000)		100(6000)	
Engine speed .....	42(2500)		42(2500)	
Generator load .....	30-50***		30-50***	
Regulating voltage, between B+ and D- on the generator.....	13.8 - 14.6	14.1 - 14.9	13.8 - 14.6	14.1 - 14.9
<b>Regulator tolerance</b>				
Load the generator with rated output x 0.85 Permitted voltage drop compared with previous reading.....		0 - 0.3		0 - 0.3

\* In car

\*\* In bench test

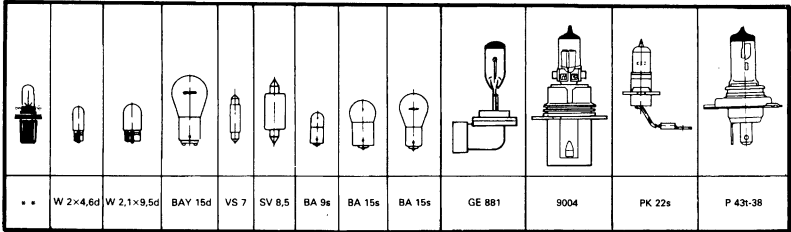
\*\*\* This load is achieved when the engine is running.

## Group 33 Starter motor

Type	Bosch DW 12V 1.4 kW	Bosch DW 12V 1.7 kW
Manufacturer P/N .....	0 001 108 <b>088</b> <b>-089 -090</b>	0 001 110 <b>063</b> <b>-068</b>
Direction of rotation: clockwise		
<b>Test values, mechanical</b>		
Armature end clearance .....	0.05 - 0.40	0.05 - 0.40
Frictional torque		
armature brake .....	0.9 - 1.4	0.9 - 1.5
.....(kpcm)	(9 - 14)	(9 - 15)
Distance from		
pinion to ring gear .....	2.0 - 3.0	2.0 - 3.0
modulus .....	2.11	2.11
clearance torque .....	0.12 - 0.18	0.12 - 0.18
.....(kpcm)	(1.2 - 1.8)	(1.2 - 1.8)
Backlash .....	0.3 - 0.6	0.3 - 0.6
Min. commutator		
diameter .....	31.2	31.2
Carbon brushes		
min. length .....	4.5	6.0
Max. runout		
armature .....	0.05	0.05
commutator .....	0.05	0.01
<b>Test values, electrical</b>		
Unloaded starter motor, .....	11.5	11.2
.....max. A	75	95
.....min. r/s(rpm)	48(2900)	46(2800)
Locked starter motor, .....	4.5	3.8
.....A	625 - 800	650 - 840
Lowest cut-in voltage		
control solenoid .....	7.3	7.3

Type	Bosch EW 12V 2.2 kW
Manufacturer P/N .....	0 001 218 017 -130
Direction of rotation: clockwise	
<b>Test values, mechanical</b>	
Armature end clearance .....	mm 0.05 - 0.30
Frictional torque	
armature brake .....	Nm 1.0 - 1.5
.....(kpcm)	(10 - 15)
Distance from	
pinion to ring gear .....	mm 2.0 - 3.0
modulus .....	mm 2.11
clearance torque .....	Nm 0.27 - 0.35
.....(kpcm)	(2.7 - 3.5)
Backlash .....	mm 0.3 - 0.6
Min. commutator	
diameter .....	mm 28.9
Carbon brushes	
min. length .....	mm 7.0
Max. runout	
armature .....	mm 0.05
commutator .....	mm 0.01
<b>Test values, electrical</b>	
Unloaded starter motor, .....	V 10.5
..... max. A	160
.....min. r/s(rpm)	70(4200)
Locked starter motor, .....	V 3.0
.....A	720 - 950
Lowest cut-in voltage	
control solenoid .....	V 7.8

## Group 35 Lighting

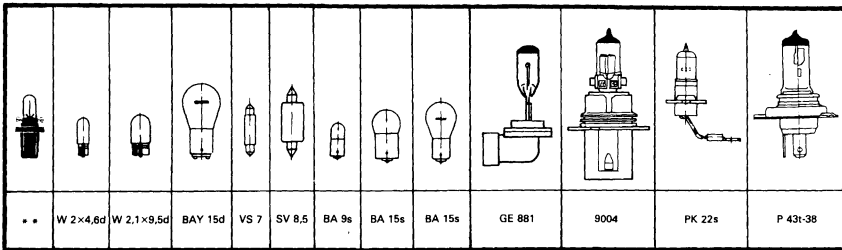


144 832

Bulbs	Rating	Socket type	USA/CDN	No.
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Headlight .....	60/55 W	P 43t-38(H4)		2
Headlight, USA/CDN.....	70/50 W	Semi-sealed	9004/HB1	2
Parking light .....	5 W (4 cp)	BA 15s		2
Parking light/ Turn signal, front, USA/CAN .....	(24/2.2 cp)	BAY 15d	1157 NA	2
Turn signal, front .....	21 W	BA 15s		2
side.....	5 W	W 2.1x9.5d		2
rear.....	21 W (32 cp)	BA 15s	1156	2
Wide-beam/fog and spotlights .....	55 W	PK 22s(H3)		2
Foglights .....	27 W		GE 881	2
Tail lights.....	5 W (4 cp)	BA 15s	67	2
Brake lights .....	21 W (32 cp)	BA 15s	1156	2
Brake lights/tail lights .....	21/5 W (32/3 cp)	BAY 15d	1157	2
High-level brake light.....	21 W (32 cp)	BA 15s	1157	1
Rear foglight.....	21 W (32 cp)	BA 15s	1157	1
Backup light .....	21 W (32 cp)	BA 15s	1157	2
Number plate light, 4-door.....	5 W	W 2.1x9.5d		2
5-door .....	4 W	BA 9s		2





144 832

Bulbs	Rating	Socket type	USA/ CAN	No.
Interior light .....	10 W	SV 8.5		1
Reading lamp, front.....	5 W	W 2.1x9.5d		2
rear .....	5 W	W 2.1x9.5d		2
Vanity mirror light .....	3 W	SV 7		2
Glove compartment light .....	2 W	BA 9s		1
Door-open warning lights .....	3 W	W 2.1x9.5d		4
Boot (trunk) light .....	10 W	SV 8.5		1
<b>Instrument lighting</b>				
Indicator and warning lamps				
YASAKI .....	1.2 W	W 2x4.6d		17
Lighting.....	3 W	W 2.1x9.5d		4
	1.2 W	W 2x4.6d		1
Control and panel lighting .....	1.2 W	W 2x4.6d		12

## Group 37 Fuses

740/940 1991-1993

No.	Supplied by	Circuits protected	A
1	Battery +	Fuel pump; Relay, injection system; Heated oxygen sensor (HO2S), heating, B 200/230 FT; Ignition system;	25
2		Hazard warning flashers; Central locking; Alarm (1993); Headlight flasher (via fuses 17 and 18);	25
3		Power seats (supply); Trailer (1993);	30
4		Brake light switch; Brake light; P-shift lock, solenoid;	15
5		Clock: Radio; Power antenna; Interior lighting; Door open warning lights; Vanity mirror; CD-changer (1993); Alarm (1993); Glove compartment lighting; Boot (trunk) light;	15
6		ECC, climate system fan and control unit;	30
7	30-rail(bat+) X-relay, high beam	Foglight; Rear foglight (excl. USA/CDN);	15
8	Main relay, power windows / seat heaters	Power windows (supply);	30
9	Ignition lock 15 I	Seat belt reminder; Key reminder; Turn signal; Manual climate control (MCC); P-shift lock(supply); Trailer (1993); Relay, radiator fan (-1991); Relief relay power windows/seat heaters; (Transient protector ABS, no fuse)	15
10		Heated rear window; Heated door mirrors; Power sunroof;	30
11	Relay, injection system	Fuel prepump; Heated oxygen sensor (HO2S), (not B 200/230 FT);	15
12	Ignition lock 15	Backup lights; Overdrive relay, M 46; Bulb failure sensor; Alarm (1993); Exhaust temperature sensor (Japan); OD, AW71; Cruise control;	15

No.	Supplied by	Circuits protected	A
13	Ignition lock 15	<b>Diesel:</b> Preheating mechanism; Fuel valve; EGR; Charge pressure limiter (-1992); <b>Magnet valve, pulsair (B 230 FD, 1993);</b> (Control modules fuel-ignition systems, no fuse); (Power stage, Ignition and Diagnostic socket, no fuse);	15
14	Ignition lock X	<b>Radio; Ambient temperature sensor (1993);</b> <b>Power door mirrors;</b> <b>Tailgate wash/wipe; Cigar lighter;</b>	15
15		<b>Horn;</b> <b>Windshield wash/wipe;</b> <b>Headlight wash/wipe;</b> <b>Power seats(control);</b> (Airbag, no fuse);	25
16		<b>Climate unit fan for standard heater and MCC;</b> <b>ECC, control module; ECC,solenoids;</b>	30
17	X-relay, high beam	<b>Left high beam;</b> <b>Indicator lamp, high beam;</b>	15
18		<b>Right high beam;</b> <b>Relay, front foglight (not USA/CDN);</b>	15
19	Bulb failure sensor	<b>Left low beam;</b> <b>Relay, front foglight;</b> <b>Beam width control;</b>	15
20		<b>Right low beam;</b> <b>Beam width control;</b>	15
21	Relay, headlight	<b>Left parking lights, front and rear;</b> <b>Number plate lighting; Instrument and control lighting;</b> <b>Ambient temperature sensor (1993);</b>	15
22		<b>Right parking lights, front and rear;</b> <b>Relay, front foglights;</b> <b>Seat belt lock(-91) and ashtray lighting, rear;</b> <b>Selector lighting automatic gearbox;</b> <b>Lighting, switches and storage compartment;</b>	15
23	Main relay, power windows / seat heaters	<b>Heated front seats (supply);</b>	25
24		<b>Spare (Test socket SRS – 1992);</b>	
25	Ignition lock 15 I or Light switch	<b>Rear foglight USA/CDN;</b> <b>Radio, USA/CDN/GB (lighting);</b> <b>Automatic low beam, EU/OS (can be disconnected);</b> (Switch, foglight, 940 USA/CDN, no fuse);	15 / 25
26	Battery +	<b>Radio, amplifier;</b>	15

## 960/940SE 1991

No.	Supplied by	Circuits protected	A
1	Light switch	Left parking light; Number plate light; Bulb failure sensor - outer tail lights;	10
2		Right parking light; Bulb failure sensor - inner tail light;	10
3	Relay, headlight	Left high beam; Left spot light;	15
4		Right high beam; Right spot light;	15
5		Test socket SRS	
6	Bulb failure sensor, 9-pin	Left low beam; Beam width control, left;	15
7		Right low beam; Beam width control, right;	10
8	Light switch	Foglights	15
9		Rear foglight; Indicator lamp, rear foglight;	10
10		<b>Instrument panel:</b> Instrument panel; Control panel; Mode selector; Beam width control; Sunroof; Controls, ECC; Radio; Clock; Cigar lighter; Ashtrays, front and rear; Gearshift gate; Seat heaters; Seat belt lock;	5
11	Ignition lock 15 I	Backup light; Turn signal; Cruise control;	15
12		Reduced low beam(dim-dip); P-shift lock (control);	15
13		Heated rear window; Heated door mirrors;	25
14		Exhaust temperature sensor(Japan); Seat belt reminder; Overdrive(M 46, AW 70/71); Power windows(control); Heated seats(control); Power sunroof(control); Bulb failure sensor, 14-pin;	10
15		Spare;	
16		Spare;	

No.	Supplied by	Circuits protected	A
17	Ignition lock X	Spare;	
18		Radio; (airbag no fuse)	5
19	Ignition lock X	Control module, ECC; Power door mirrors; Cigar lighter; Power seats(control); Tailgate wash/wipe;	15
20		Horn; Windshield wash/wipe; Headlamp wash/wipe;	25
21	Ignition lock 15	Glowplug mechanism, diesel; Mode selector, AW 30-40/43;	5
22		ABS(control); (combined instrument, no fuse);	5
23		Control module, AW 30-40/43 (A/supply); Control module, fuel system; Diagnostic socket (B 6304); Relay, radiator fan(B 230/280); Relay, ignition coil Motronic (control);	10
24	Battery +	Control module, AW 30-40/43 (B/memory); Control modules, fuel system and ignition system (MFI);	10
25		Hazard warning flashers; Central locking; (light switch no fuse)	25
26		Clock; Interior lights; Reading light; Door open warning lamps; Boot light; Engine compartment light;	10
27		Brake light switch; P-shift lock (supply); Bulb failure sensor - brake light;	15
28		Heater fan (ECC); Electronic climate control (ECC);	30
29		Power antenna; Trailer; (turn signal switch, no fuse);	30
30	Relay, fuel injection	Fuel pump; Heated oxygen sensor (HO2S);	10
31	Battery +	Relay, fuel injection - fuel pump;	25
32		Amplifier, radio;	15
33		Radio;	10
34	Relay, power windows	Power windows (supply); Power sunroof (supply)	30
35		Heated seats (supply); Power seats (supply)	30

960 1992-1993

No.	Supplied by	Circuits protected	A
1	Light switch	Left parking light; Number plate light; Bulb failure sensor - outer tail light;	10
2		Right parking light; Bulb failure sensor - inner tail light;	10
3	Relay, headlight	Left high beam; Left spot light;	15
4		Right high beam; Right spot light;	15
5		Test socket SRS (- 1992);	
6	1992: Bulb failure sensor, 9-pin	Left low beam; Beam width control, left;	15
7	1993: Relay, headlight	Right low beam; Beam width control, right;	10
8	Light switch	Foglight front;	15
9		Rear foglight; Indicator lamp, rear foglight;	10
10		<b>Panel lighting:</b> Instrument panel; Control panel; Mode selector; Beam width control; Sunroof; Controls, ECC; Radio; Clock; Cigar lighter; Ashtrays, front and rear; Gearshift gate; Heated seats; Ambient temperature sensor (1993)	5
11	Ignition lock 15 I	Backup lights; Turn signal; Cruise control;	15
12		Reduced low beam(dim-dip); P-shift lock (control);	15
13		Heated rear window; Heated door mirrors;	25
14		Exhaust temperature sensor(Japan); Seat belt reminder; Key reminder (USA/CDN 1993); Overdrive(M 46, AW 70/71); Power windows(control); Heated seats(control); Power sunroof(control); Alarm (1993); Bulb failure sensor, 14-pin; Relief relay 15 I	10
15		Spare;	
16	Relief relay 15 I	Heated seats (supply)	30
17	Ignition lock X	Spare;	

No.	Supplied by	Circuits protected	A
18	Ignition lock X	<b>Radio;</b> (airbag no fuse)	5
19		<b>Control module, ECC; Power door mirrors;</b> <b>Cigar lighter; Power seats(control);</b> <b>Tailgate wash/wipe;</b> <b>Ambient temperature sensor (1993)</b>	15
20		<b>Horn; Windshield wash/wipe;</b> <b>Headlamp wash/wipe;</b>	25
21	Ignition lock 15	<b>Diesel: Glowplug mechanism;</b> <b>Fuel valve;</b> <b>EGR; Turbo control valve (TCU);</b> <b>Mode selector ((AW 30-40/43);</b>	5
22		<b>ABS(control);</b> (combined instrument, no fuse);	5
23		<b>Control module, AW 30-40/43 (A/supply);</b> <b>Control module, fuel system;</b> <b>Data link connector (DLC) B 6304;</b>	10
24	Battery +	<b>Control module, AW 30-40/43 (B/memory);</b> <b>Control modules, fuel system and ignition system;</b>	10
25		<b>Hazard warning flashers; Alarm (1993);</b> <b>Central locking; (light switch no fuse)</b>	25
26		<b>Clock; Interior lights; Reading lights;</b> <b>Door open warning lamps; Vanity mirror light;</b> <b>Boot light; Alarm (1993);</b>	10
27		<b>Brake light; Brake light switch;</b> <b>P-shift lock (supply);</b> <b>Control module ABS, brake signal (1993);</b>	15
28		<b>Heater fan (ECC);</b> <b>Electronic climate control (ECC);</b>	30
29		<b>Power antenna; Trailer;</b> (turn signal switch, no fuse);	30
30	Relay, fuel injection	<b>Fuel pump; Lambdasond (B 6304);</b>	10
31	Battery +	<b>Relay, fuel injection; Heated oxygen sensor (HO2S);</b> <b>Distributor ignition (DI) system, EZ 116 K;</b>	25
32		<b>Amplifier, radio 1992;</b> <b>Amplifier, radio 1993;</b>	15 10
33		<b>Radio;</b>	10
34	Relief relay 15 I	<b>Power windows (supply);</b> <b>Power sunroof (supply)</b>	30
35		<b>Power seats (supply)</b>	30

940 1994

No.	Supplied by	Circuits protected	A
1	Battery +	Fuel pump; Relay, injection system; Heated oxygen sensor (HO2S), heating, B 200/230 FT; Ignition system;	25
2		Hazard warning flashers; Central locking; Alarm; Headlight flasher (via fuses 17 and 18);	25
3		Power seats (supply); Trailer;	30
4		Brake light switch; Bulb failure sensor; Brake light; P-shift lock, solenoid;	15
5		Clock: Radio; Power antenna; CD-changer; Interior lighting; Door open warning lights; Vanity mirror; Alarm; Glove compartment lighting; Boot (trunk) light;	15
6		ECC, climate system fan and control unit;	30
7	30-rail (bat +) X-relay, high beam	Foglight; Rear foglight (excl. USA/CDN);	15
8	Relief relay, power windows / seat heaters	Power windows (supply);	30
9	Ignition lock 15 I	Seat belt reminder; Key reminder; Turn signal; Manual climate control (MCC); P-shift lock(supply); Trailer; Relief relay power (windows/seat heaters);	15
10		Heated rear window; Heated door mirrors; Power sunroof;	30
11	Relay, injection system	Fuel prepump; Heated oxygen sensor (HO2S), (not B 200/230 FT);	15
12	Ignition lock 15	Backup lights; Overdrive relay, M 46; Bulb failure sensor; Alarm; Exhaust temperature sensor (Japan); OD, AW71; Cruise control;	15



No.	Supplied by	Circuits protected	A
13	Ignition lock 15	<b>Diesel:</b> Preheating mechanism; Fuel valve; EGR; Magnet valve, pulsair;	15
14	Ignition lock X	Radio; Ambient temperature sensor; Power door mirrors; Tailgate wash/wipe; Cigar lighter;	15
15		Horn; Windshield wash/wipe; Headlight wash/wipe; Power seats(control);	25
16		Climate unit fan for standard heater and MCC; ECC, control module; ECC, solenoids;	30
17	Relief relay, high beam	Left high beam; Indicator lamp, high beam;	15
18		Right high beam; Relay, front foglight (not USA/CDN);	15
19	Bulb failure sensor	Left low beam; Relay, front foglight; Beam width control;	15
20		Right low beam; Beam width control;	15
21	Relay, headlight	Left parking lights, front and rear; Number plate lighting; Instrument and control lighting; Ambient temperature sensor;	15
22		Right parking lights, front and rear; Relay, front foglights; Ashtray lighting, rear; Selector lighting automatic gearbox; Lighting, switches and storage compartment;	15
23	Relief relay 15 I	Heated front seats (supply);	25
24	Ignition lock 15	ABS;	15
25	Ignition lock 15 I or Fog light switch	Rear foglight USA/CDN/J; Automatic low beam, EU/OS (can be disconnected);	25
26	Battery +	Radio, amplifier;	15

960 1994

No.	Supplied by	Circuits protected	A
1	Light switch	Left parking light; <b>Number plate light;</b> <b>Bulb failure sensor - outer tail light;</b>	10
2		Right parking light; <b>Bulb failure sensor - inner tail light;</b>	10
3	Relay, headlight	Left high beam; Left spot light;	15
4		Right high beam; Right spot light;	15
5	Relay, headlight	Spare;	
6		Left low beam; Beam width control, left;	15
7		Right low beam; Beam width control, right;	10
8	Light switch	Foglight front;	15
9		Rear foglight; Indicator lamp, rear foglight;	10
10		<b>Panel lighting:</b> Instrument panel; <b>Control panel;</b> Mode selector; Beam width control; <b>Sunroof;</b> <b>Controls, ECC; Radio; Clock; Cigar lighter;</b> Ashtrays, front and rear; Gearshift gate; <b>Heated seats; Ambient temperature sensor;</b>	5
11	Ignition lock 15 I	Backup lights; Turn signal; Cruise control;	15
12		Reduced low beam (dim-dip); P-shift lock (control);	15
13		Heated rear window; Heated door mirrors;	25
14		Exhaust temperature sensor (Japan); Seat belt reminder; <b>Key reminder (USA/CDN);</b> Overdrive(M 46, AW 70/71); Power windows (control); <b>Heated seats (control);</b> Power sunroof (control); <b>Alarm;</b> Bulb failure sensor, 14-pin; <b>Relief relay 15 I</b>	10
15		Spare;	
16	Relief relay 15 I	Heated seats (supply)	30

No.	Supplied by	Circuits protected	A
17	Ignition lock X	Spare;	
18		Radio;	5
19		Control module, ECC; Power door mirrors; Cigar lighter; Power seats (control); Tailgate wash/wipe; Ambient temperature sensor;	15
20		Horn; Windshield wash/wipe; Headlamp wash/wipe;	25
21	Ignition lock 15	Diesel: Glowplug mechanism; Fuel valve; EGR; Turbo control valve (TCU); Mode selector ((AW 30-40/43);	5
22		ABS (control);	5
23		Control module, AW 30-40/43 (A/supply); Control module, fuel system; Diagnostic socket (B 6304); Relay, ignition coil, Motronic;	10
24		Battery +	Control module, AW 30-40/43 (B/memory); Control modules, fuel system and ignition system;
25		Hazard warning flashers; Alarm; Central locking;	25
26		Clock; Interior lights; Reading lights; Door open warning lamps; Vanity mirror light; Glove compartment light; Boot light; Alarm;	10
27		Brake light; Bulb failure sensor - brakelight; P-shift lock (supply); Control module ABS and AW 30-40/43, brake signal;	15
28		Heater fan (ECC); Electronic climate control (ECC);	30
29		Power antenna; Trailer;	30
30	Relay, fuel injection	Fuel pump; Lambdasond (B 6304);	10
31	Battery +	Relay, fuel injection - fuel pump; Heated oxygen sensor (HO2S), LH 2.4;	25
32		Spare;	10
33		Radio;	15
34	Relief relay 15 I	Power windows (supply); Power sunroof (supply)	30
35		Power seats (supply)	30

## Group 38 Instruments

Fuel level sensor	Volume litres	Resistance $\Omega$
<b>Main tank,</b>		
tube sensor, –1992, 740/940, empty tank .....	0	0
full tank .....	60	280
960, empty tank .....	0	0
full tank .....	80	362
1993–, 940, empty tank .....	0	131
full tank .....	75	0
960, empty tank .....	0	131
full tank .....	80	0
lever sensor		
(with extra tank) .....	20	27.5
<b>Extra tank(-91),</b>		
lever sensor, empty tank .....	0	0
full tank .....	20	60

Engine coolant temperature (ECT) sensor	Temperature $^{\circ}\text{C}$ ( $^{\circ}\text{F}$ )	Resistance $\Omega$
Resistance of sensor at various temperatures.	60 (140)	560
	90 (194)	206
	100 (212)	153