



Cigar lighter (power outlet) fuses in the KIA Optima are located in the Instrument panel fuse box (see fuse “POWER OUTLET” (Front Power Outlet #1, Front Cigarette Lighter & Power Outlet #2)), and in the Engine compartment fuse box (fuses “POWER OUTLET 1” (Power Outlet Relay), “POWER OUTLET 3” (Rear Power Outlet) and “POWER OUTLET 2” (Front Power Outlet #1)).

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Fuse box location

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Inside the fuse/relay panel covers, you can find the label describing fuse/relay name and capacity. Not all fuse panel descriptions in this manual may be applicable to your vehicle.



Fuse box diagrams

2016

Instrument panel, version 1

Advertisements

Assignment of the fuses in the Instrument panel v1 (2016)

Name	Amp rating	Circuit Protected
MODULE 7	10A	Around View Unit, Front Air Ventilation Seat Control Module, Front Seat Warmer Control Module, Rear Seat Warmer Control Module
MODULE 5	10A	A/C Control Module, Electro Chromic Mirror, Crash Pad Switch, Head Lamp LH/RH, Auto Head Lamp Leveling Device Module, A/V & Navigation Head Unit, Fuel Lid & Trunk Open Switch, Shift Lever Indicator, Driver IMS Module, Driver IMS Module, Front Air Ventilation Seat Control Module, Front Seat Warmer Control Module, Rear Seat Warmer Control Module
MODULE 6	10A	BCM, Smart Key Control Module
A/CON	10A	A/C Control Module, E/R Junction Block (Blower Relay)

Name	Amp rating	Circuit Protected
START	10A	[W/O Smart Key & IMMO.] ICM Relay Box (Burglar Alarm Relay) [With Smart Key / IMMO.] Transaxle Range Switch, PCM (G4KH/G4KJ)
A/BAG	15A	SRS Control Module, Passenger Occupant Detection
MODULE 3	10A	BCM, ATM Shift Lever, Stop Lamp Switch, DBL Unit, Keyboard, A/C Control Module
MODULE 4	10A	Console Switch, Blind Spot Detection Radar LH/RH, Smart Cruise Control Unit, AEB Module, Lane Keeping Assist Module
INTERIOR LAMP	10A	Trunk Room Lamp, Ignition Key III. & Door Warning Switch, Glove Box Lamp, Driver/Passenger Smart Key Outside Handle, Front Vanity Lamp Switch LH/RH, Overhead Console Lamp, Center Room Lamp, Center Personal Lamp, Rear Personal Lamp LH/RH, Driver/Passenger Scuff Lamp
MDPS	10A	MDPS Unit (Column/Rack), Steering Angle Sensor
IG1	25A	PCB Block (Fuse - TCU 2, ABS 3, ECU 3, VACUUM PUMP 2)
MODULE 9	10A	Immobilizer Module, Smart Key Control Module
WASHER	15A	Multifunction Switch (Wiper Low & Washer Switch)
MODULE 8	10A	A/C Control Module, Driver/Passenger Door Module
CLUSTER	10A	Instrument Cluster (IG1)
MULTI MEDIA	15A	Audio, A/V & Navigation Head Unit, Keyboard
HEATED STEERING	15A	BCM (Steering Wheel Heated)
MODULE 1	10A	Console Switch, Key Solenoid, Driver/Passenger Door Module
DR LOCK	20A	Door Lock Relay, Door Unlock Relay

Name	Amp rating	Circuit Protected
SMART KEY	15A	Smart Key Control Module
A/BAG IND	10A	Instrument Cluster (Air Bag IND. Power)
TRUNK	10A	Trunk Lid Relay, Fuel Filler & Trunk Open Switch, Trunk Lid Motor, ICM Relay Box (Fuel Filler Open Relay)
SUNROOF 2	20A	Sunroof Control Unit (Roller)
MEMORY 1	10A	Instrument Cluster, A/C Control Module, Data Link Connector, BCM, Wireless Charger, Driver IMS Module, Rain Sensor, ICM Relay Box (Outside Mirror Folding/Unfolding Mirror Relay), Security Indicator, Auto Light & Photo Sensor, Driver/Passenger Door Module, Electro Chromic Mirror
S/HEATER RR	25A	Rear Seat Warmer Control Module
SUNROOF 1	20A	Sunroof Control Unit (Glass)
S/HEATER FRT	25A	Front Air Ventilation Seat Control Module, Front Seat Warmer Control Module
MODULE 2	10A	Audio, A/V & Navigation Head Unit, Keyboard, Around View Unit, AMP, Power Outside Mirror Switch, Smart Key Control Module, BCM, Wireless Charger, Rear USB Charger #1/#2, E/R Junction Block (Power Outlet Relay)
P/WINDOW RH	25A	Power Window RH Relay, Rear Power Window Switch RH, Power Window Main Switch, Passenger Safety Power Window Module
P/SEAT PASS	25A	Passenger Seat Manual Switch, Walk In Relay Module, Passenger Reclining Limit Switch
AMP	25A	AMP (JBL)
BRAKE SWITCH	10A	Stop Lamp Switch, Immobilizer Module, Smart Key Control Module, Start/Stop Button Switch

Name	Amp rating	Circuit Protected
P/WINDOW LH	25A	Power Window LH Relay, Rear Power Window Switch LH, Power Window Main Switch, Driver Safety Power Window Module
P/SEAT DRV	30A	Driver Seat Manual Switch, Driver IMS Module
POWER OUTLET	20A	Front Power Outlet #1, Front Cigarette Lighter & Power Outlet #2

Advertisements

Instrument panel, version 2

Assignment of the fuses in the Instrument panel v2 (2016)

Advertisements

Engine compartment, version 1

Assignment of the fuses in the Engine compartment v1 (2016)

Name	Amp rating	Circuit Protected
MULTI FUSES:		
MDPS 1	80A	MDPS Unit (Column)
COOLING FAN 2	60A	[G4KH/G4FJ] Cooling Fan1 Relay, Cooling Fan2 Relay
COOLING FAN 1	50A	[G4KJ] Cooling Fan1 Relay
B+ 3	50A	Smart Junction Block (IPS 2 (IPS 5), IPS 3 (IPS 6), IPS 7, IPS 8)
REAR HEATED	50A	Rear Heated Relay
DCT1	40A	[G4FJ-DCT] TCM

Name	Amp rating	Circuit Protected
BLOWER	40A	Blower Relay
POWER OUTLET 1	40A	Power Outlet Relay
IG2	30A	[W/O Smart Key] Start Relay, Ignition Switch, [With Smart Key] Start Relay, PCB Block (IG2 Relay)
MDPS 2	100A	MDPS Unit (Rack)
B+1	60A	Smart Junction Block (Fuse - SUNROOF1, SUNROOF2, S/HEATER RR, P/SEAT DRV, P/SEAT PASS, P/WINDOW LH, P/WINDOW RH, TRUNK)
B+5	60A	PCB Block (Engine Control Relay, Fuse -TCU1, ECU2, FUEL PUMP, HORN, WIPER1)
B+2	60A	Smart Junction Block (IPS 1, IPS 4, Fuse - AMP, S/HEATER FRT)
ABS 1	40A	ESC Module
IG1	40A	[W/O Smart Key] Ignition Switch, [With Smart Key] PCB Block (IG1/ACC Relay)
DOT 2	40A	[G4FJ-DCT] TCM
ABS 2	30A	ESC Module, Multipurpose Check Connector
FUSES:		
B+4	40A	Smart Junction Block (Leak Current Autocut Device Fuse - INTERIOR LAMP, MEMORY1, MULTI MEDIA, Fuse - DOOR LOCK, MODULE1, SMART KEY, BRAKE SWITCH)
E-CVVT 1	40A	E-CVVT Relay
VACUUM PUMP 1	20A	Vacuum Pump
DEICER	20A	Deicer Relay

Name	Amp rating	Circuit Protected
AMS	10A	Battery Sensor
E-CVVT 2	20A	PCM
A/CON	10A	A/C Control Module
E-CVVT 3	20A	PCM
HEATED MIRROR	10A	A/C Control Module, Driver/Passenger Power Outside Mirror, ECM
WIPER 2	10A	BCM, PCM/ECM
H/LAMP HI	20A	Head Lamp HI Relay
FUEL PUMP	20A	Fuel Pump Relay
ECU 1	20A	PCM/ECM
SENSORS 2	10A	E/R Junction Block (Fuel Pump Relay, Cooling Fan 1/2 Relay) [G4KJ] Oil Control Valve (Exhaust), Purge Control Solenoid Valve, Variable Intake Solenoid Valve, Canister Close Valve [G4KH] Oil Control Valve (Exhaust), Purge Control Solenoid Valve, RCV Control Solenoid Valve, Canister Close Valve [G4FJ] Oil Control Valve #1/#2, Purge Control Solenoid Valve, RCV Control Solenoid Valve, Canister Close Valve
TCU 2	15A	Transaxle Range Switch, TCM
ABS 3	10A	ESC Module, Multipurpose Check Connector
POWER OUTLET 3	20A	Rear Power Outlet
B/UP LAMP	10A	PCM/TCM, Transaxle Range Switch, Audio, Electro Chromic Mirror, Rear Combination Lamp (IN) LH/RH

Name	Amp rating	Circuit Protected
SENSOR 1	15A	Oxygen Sensor (Up/Down)
IGN COIL	20A	Ignition Coil #1/#2/#3/#4
ECU 2	10A	PCM/ECM
TCU 1	10A	PCM/TCM
VACUUM PUMP 2	10A	Vacuum Pump, Vacuum Switch
ECU 3	10A	PCM/ECM
POWER OUTLET 2	20A	Front Power Outlet #1
HORN	20A	Horn Relay, ICM Relay Box (Burglar Alarm Horn Relay)
WIPER 1	30A	Wiper Power Relay

Engine compartment, version 2

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Assignment of the fuses in the Engine compartment v2 (2016)

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Engine compartment (Diesel)

Assignment of the fuses in the Engine compartment (Diesel engine) (2016)

Engine compartment (Diesel engine, Passenger side)

**Assignment of the fuses in the Engine compartment (Diesel engine, Passenger side)
(2016)**

Battery terminal cover (Main fuse)

2017

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Instrument panel

Sedan

Wagon

Assignment of the fuses in the Instrument panel (2017)

Engine compartment

Sedan, Gasoline

Sedan, Diesel

Wagon, Gasoline

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Assignment of the fuses in the engine compartment (2017)

Engine compartment (Diesel, Passenger side)

Assignment of the fuses in the Engine compartment (Diesel engine, Passenger side) (2017)

Battery terminal cover (Main fuse)

2018, 2019

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Instrument panel

Assignment of the fuses in the Instrument panel (2018, 2019)

Name	Amp rating	Circuit Protected
MODULE 7	10A	Around View Unit, Front Air Ventilation Seat Control Module, Front Seat Warmer Control Module, Rear Seat Warmer Control Module
MODULE 5	10A	A/C Control Module, Electro Chromic Mirror, Crash Pad Switch, Head Lamp LH/RH, Auto Head Lamp Leveling Device Module, A/V & Navigation Head Unit, Fuel Lid & Trunk Open Switch, Shift Lever Indicator, Driver IMS Module, Driver IMS Module, Front Air Ventilation Seat Control Module, Front Seat Warmer Control Module, Rear Seat Warmer Control Module
MODULE 6	10A	BCM, Smart Key Control Module
A/CON	10A	A/C Control Module, E/R Junction Block (Blower Relay)
START	10A	[W/O Smart Key & IMMO.] ICM Relay Box (Burglar Alarm Relay) [With Smart Key / IMMO.] Transaxle Range Switch, PCM (G4KH/G4KJ)

Name	Amp rating	Circuit Protected
A/BAG	15A	SRS Control Module, Passenger Occupant Detection
MODULE 3	10A	BCM, ATM Shift Lever, Stop Lamp Switch, DBL Unit, Keyboard, A/C Control Module
MODULE 4	10A	Console Switch, Blind Spot Detection Radar LH/RH, Smart Cruise Control Unit, AEB Module, Lane Keeping Assist Module
INTERIOR LAMP	10A	Trunk Room Lamp, Ignition Key III. & Door Warning Switch, Glove Box Lamp, Driver/Passenger Smart Key Outside Handle, Front Vanity Lamp Switch LH/RH, Overhead Console Lamp, Center Room Lamp, Center Personal Lamp, Rear Personal Lamp LH/RH, Driver/Passenger Scuff Lamp
MDPS	10A	MDPS Unit (Column/Rack), Steering Angle Sensor
IG1	25A	PCB Block (Fuse - TCU 2, ABS 3, ECU 3, VACUUM PUMP 2)
MODULE 9	10A	Immobilizer Module, Smart Key Control Module
WASHER	15A	Multifunction Switch (Wiper Low & Washer Switch)
MODULE 8	10A	A/C Control Module, Driver/Passenger Door Module
CLUSTER	10A	Instrument Cluster (IG1)
MULTI MEDIA	15A	Audio, A/V & Navigation Head Unit, Keyboard
HEATED STEERING	15A	BCM (Steering Wheel Heated)
MODULE 1	10A	Console Switch, Key Solenoid, Driver/Passenger Door Module, BCM
DR LOCK	20A	Door Lock Relay, Door Unlock Relay
SMART KEY	15A	Smart Key Control Module
A/BAG IND	10A	Instrument Cluster (Air Bag IND. Power)

Name	Amp rating	Circuit Protected
TRUNK	10A	Trunk Lid Relay, Fuel Filler & Trunk Open Switch, Trunk Lid Motor, ICM Relay Box (Fuel Filler Open Relay)
SUNROOF 2	20A	Sunroof Control Unit (Roller)
MEMORY 1	10A	Instrument Cluster, A/C Control Module, Data Link Connector, Wireless Charger, Driver IMS Module, Rain Sensor, ICM Relay Box (Outside Mirror Folding/Unfolding Mirror Relay), Security Indicator, Auto Light & Photo Sensor, Driver/Passenger Door Module, Electro Chromic Mirror
S/HEATER RR	25A	Rear Seat Warmer Control Module
SUNROOF 1	20A	Sunroof Control Unit (Glass)
S/HEATER FRT	25A	Front Air Ventilation Seat Control Module, Front Seat Warmer Control Module
MODULE 2	10A	Audio, A/V & Navigation Head Unit, Keyboard, Around View Unit, AMP, Power Outside Mirror Switch, Smart Key Control Module, BCM, Wireless Charger, Rear USB Charger #1/#2, E/R Junction Block (Power Outlet Relay)
P/WINDOW RH	25A	Power Window RH Relay, Rear Power Window Switch RH, Power Window Main Switch, Passenger Safety Power Window Module
P/SEAT PASS	25A	Passenger Seat Manual Switch, Walk In Relay Module, Passenger Reclining Limit Switch
AMP	25A	AMP (JBL)
BRAKE SWITCH	10A	Stop Lamp Switch, Immobilizer Module, Smart Key Control Module, Start/Stop Button Switch
P/WINDOW LH	25A	Power Window LH Relay, Rear Power Window Switch LH, Power Window Main Switch, Driver Safety Power Window Module

Name	Amp rating	Circuit Protected
P/SEAT DRV	30A	Driver Seat Manual Switch, Driver IMS Module
POWER OUTLET	20A	Front Power Outlet #1, Front Cigarette Lighter & Power Outlet #2

Engine compartment

Advertisements

Assignment of the fuses in the Engine compartment (2018, 2019)

Name	Amp rating	Circuit Protected
MULTI FUSES:		
MDPS 1	80A	MDPS Unit (Column)
COOLING FAN 2	60A	[G4KH/G4FJ] Cooling Fan1 Relay, Cooling Fan2 Relay
COOLING FAN 1	50A	[G4KJ] Cooling Fan1 Relay
B+ 3	50A	Smart Junction Block (IPS 2 (IPS 5), IPS 3 (IPS 6), IPS 7, IPS 8)
REAR HEATED	50A	Rear Heated Relay
DCT1	40A	[G4FJ-DCT] TCM
BLOWER	40A	Blower Relay
POWER OUTLET 1	40A	Power Outlet Relay
IG2	30A	[W/O Smart Key] Start Relay, Ignition Switch, [With Smart Key] Start Relay, PCB Block (IG2 Relay)
MDPS 2	100A	MDPS Unit (Rack)
B+1	60A	Smart Junction Block (Fuse - SUNROOF1, SUNROOF2, S/HEATER RR, P/SEAT DRV, P/SEAT PASS, P/WINDOW LH, P/WINDOW RH, TRUNK)
B+5	60A	PCB Block (Engine Control Relay, Fuse - TCU1, ECU2, FUEL PUMP, HORN, WIPER1)
B+2	60A	Smart Junction Block (IPS 1, IPS 4, Fuse - AMP, S/HEATER FRT)
ABS 1	40A	ESC Module

Name	Amp rating	Circuit Protected
IG1	40A	[W/O Smart Key] Ignition Switch, [With Smart Key] PCB Block (IG1/ACC Relay)
DCT 2	40A	[G4FJ-DCT] TCM
ABS 2	30A	ESC Module, Multipurpose Check Connector
FUSES:		
B+4	40A	Smart Junction Block (Leak Current Autocut Device Fuse - INTERIOR LAMP, MEMORY1, MULTI MEDIA, Fuse - DOOR LOCK, MODULE1, SMART KEY, BRAKE SWITCH)
E-CVVT 1	40A	E-CVVT Relay
VACUUM PUMP 1	20A	Vacuum Pump
DEICER	20A	Deicer Relay
AMS	10A	Battery Sensor
E-CVVT 2	20A	PCM
A/CON	10A	A/C Control Module
E-CVVT 3	20A	PCM
HEATED MIRROR	10A	A/C Control Module, Driver/Passenger Power Outside Mirror, ECM
WIPER 2	10A	BCM, PCM/ECM
H/LAMP HI	20A	Head Lamp HI Relay
FUEL PUMP	20A	Fuel Pump Relay
ECU 1	20A	PCM/ECM
SENSORS 2	10A	E/R Junction Block (Fuel Pump Relay, Cooling Fan 1/2 Relay) [G4KJ] Oil Control Valve (Exhaust), Purge Control Solenoid

Name	Amp rating	Circuit Protected
		Valve, Variable Intake Solenoid Valve, Canister Close Valve [G4KH] Oil Control Valve (Exhaust), Purge Control Solenoid Valve, RCV Control Solenoid Valve, Canister Close Valve [G4FJ] Oil Control Valve #1/#2, Purge Control Solenoid Valve, RCV Control Solenoid Valve, Canister Close Valve
TCU 2	15A	Transaxle Range Switch, TCM
ABS 3	10A	ESC Module, Multipurpose Check Connector
POWER OUTLET 3	20A	Rear Power Outlet
B/UP LAMP	10A	PCM/TCM, Transaxle Range Switch, Audio, Electro Chromic Mirror, Rear Combination Lamp (IN) LH/RH
SENSOR 1	15A	Oxygen Sensor (Up/Down)
IGN COIL	20A	Ignition Coil #1/#2/#3/#4
ECU 2	10A	PCM/ECM
TCU 1	10A	PCM/TCM
VACUUM PUMP 2	10A	Vacuum Pump, Vacuum Switch
ECU 3	10A	PCM/ECM
POWER OUTLET 2	20A	Front Power Outlet #1
HORN	20A	Horn Relay, ICM Relay Box (Burglar Alarm Horn Relay)
WIPER 1	30A	Wiper Power Relay

Battery terminal cover (Main fuse)