

Table of Contents

General Information	1-1	Engine/Propulsion	5-1
General Information	1-3	12 V Starting and Charging	5-3
Body Systems	2-1	HVAC	6-1
Fixed and Moveable Windows	2-3	HVAC - Automatic	6-3
Horns and Pedestrian Alerts	2-9	Power and Signal Distribution	7-1
Lighting	2-12	Electrical Component and Inline Harness	
Mirrors	2-46	Connector End Views	7-3
Trailer Systems	2-54	Power Outlets	7-847
Vehicle Access	2-67	Wiring Systems and Power	
Wipers and Washers	2-85	Management	7-858
Brakes	3-1	Safety and Security	8-1
Park Brake	3-3	Parking Assistance Systems	8-3
Driver Information and Entertainment	4-1	INDEX	INDEX-1
Image Display Cameras	4-3		

General Information

Introduction

Vehicle, Engine and Transmission ID and VIN Location, Derivative and Usage



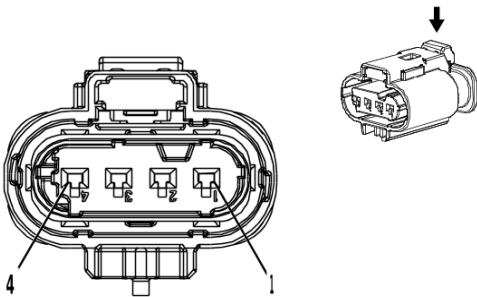
5028742

The vehicle identification number (VIN) plate (1) is the legal identifier of the vehicle. The VIN plate is located on the upper left corner of the instrument panel. The VIN number can be seen through the windshield from the outside of the vehicle:

Vehicle Identification Number (VIN) System

Position	Definition	Character	Description
1	Country of Origin	1	United States
		3	Mexico
2	Manufacturer	G	General Motors
3	Vehicle Brand/Type	K	GMC MPV
4	GVWR/Brake System/Body Style	F	7,001–8,000 lbs Cargo Van/Four (4) Door Cab/Utility, Passenger Van

B52E Heated Oxygen Sensor - Bank 2 Sensor 1



4381050

Connector Part Information

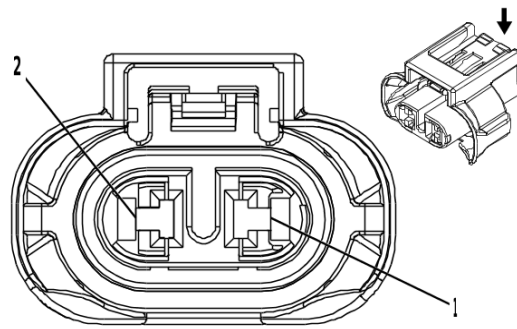
Harness Type: Engine Wiring Harness
OEM Connector: 33253021
Service Connector: 19354075
Description: 4-Way F 1.2 Multilock Series, Sealed(BK)

Terminal Part Information

Terminal Type ID	Terminated Lead	Diagnostic Test Probe	Terminal Removal Tool
I	Not required	J-35616-12 (BU)	No Tool Required

B52E Heated Oxygen Sensor - Bank 2 Sensor 1

Pin	Size	Color	Circuit	Function	Terminal Type ID	Option
1	0.5	GN / YE	3212	HO2S Heater Low Control Bank 2 Sensor 1	I	—
2	0.75	VT / BU	5293	Powertrain Main Relay Fused Supply Voltage 4	I	—
3	0.5	YE / WH	3211	HO2S Low Signal Bank 2 Sensor 1	I	—
4	0.5	VT / WH	3210	HO2S High Signal Bank 2 Sensor 1	I	—

E29RF Front Fog Lamp - Right

3404058

Connector Part Information

Harness Type: Front Object Alarm Sensor Wiring Harness

OEM Connector: 13930730

Service Connector: Service by Harness - See Part Catalog

Description: 2-Way F 2.8 APEX Series, Sealed(BK)

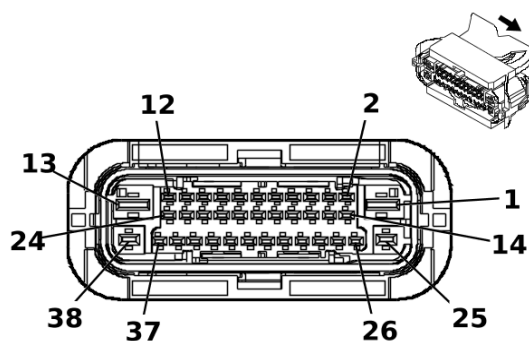
Terminal Part Information

Terminal Type ID	Terminated Lead	Diagnostic Test Probe	Terminal Removal Tool
I	Not required	J-35616-4A (PU)	No Tool Required

E29RF Front Fog Lamp - Right

Pin	Size	Color	Circuit	Function	Terminal Type ID	Option
1	0.5	BN / GN	5062	Right Front Fog Lamp Control	I	—
2	0.5	BK	250	Ground	I	—

K69 Transfer Case Control Module



5199340

Connector Part Information

Harness Type: Engine Wiring Harness

OEM Connector: 35497867

Service Connector: 86825458

Description: 38-Way F 1.5, 2.8, 4.8 MCP Series, Sealed(BK with BN Inner Connector)

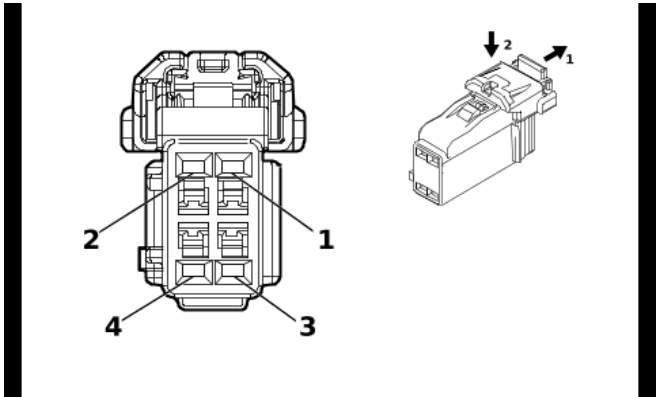
Terminal Part Information

Terminal Type ID	Terminated Lead	Diagnostic Test Probe	Terminal Removal Tool
I	19368624	J-35616-35 (VT)	J-38125-212
II	19369235	J-35616-14 (GN)	EL-38125-560A
III	85158596	J-35616-40 (BU)	EL-38125-560A

K69 Transfer Case Control Module

Pin	Size	Color	Circuit	Function	Terminal Type ID	Option
1	2.5	RD / GY	1342	Battery Positive Voltage	III	—
2	—	—	—	Not Occupied	—	—
3	0.5	BU / YE	4979	AUTOSAR CAN Bus [+] 2 Serial Data	II	—
4	0.5	WH	4978	AUTOSAR CAN Bus [-] 2 Serial Data	II	—
5	0.5	WH / GN	7479	Rotary Position Sensor Signal	II	—
6	—	—	—	Not Occupied	—	—
7	0.5	YE	7474	Incremental Encoder Direction Signal	II	—
8	—	—	—	Not Occupied	—	—
9	0.5	YE / WH	1695	4WD Locked Range Indicator Control	II	—
10	—	—	—	Not Occupied	—	—
11	0.5	VT / GY	8017	Secondary Axle Motor Relay Control	II	—
12	0.5	GY / BK	1570	Front Axle Actuator Control	II	—
13	2.5	YE / VT	1553	Transfer Case Motor Counter Clockwise Control	III	—
14	—	—	—	Not Occupied	—	—
15	0.5	BU / YE	4979	AUTOSAR CAN Bus [+] 2 Serial Data	II	—
16	0.5	WH	4978	AUTOSAR CAN Bus [-] 2 Serial Data	II	—
17	—	—	—	Not Occupied	—	—
18	0.5	VT / BK	2139	Run/Crank Ignition 1 Voltage	II	—
19	0.5	BU / GY	7473	Incremental Encoder Impulse Signal	II	—
20	0.5	WH / RD	7477	Gear Position Sensor 5V Reference	II	—

P19ALU Radio Rear Side Door Upper Speaker - Left (UQH)



5490507

Connector Part Information

Harness Type: Left Rear Side Door Door Lock Door Wiring Harness
OEM Connector: 6098-8438
Service Connector: Service by Harness - See Part Catalog
Description: 4-Way F 1.2 Series(GN)

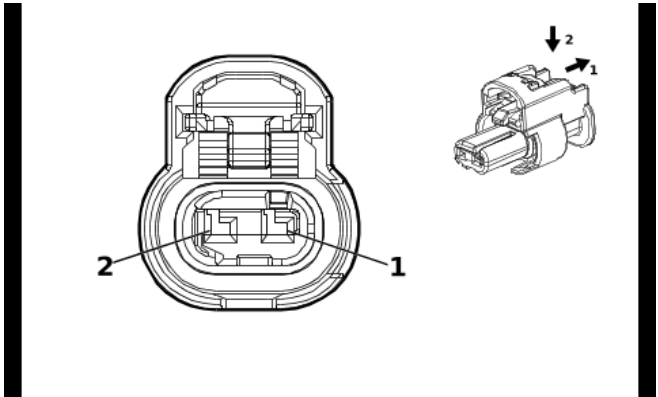
Terminal Part Information

Terminal Type ID	Terminated Lead	Diagnostic Test Probe	Terminal Removal Tool
I	Not required	No Tool Required	No Tool Required

P19ALU Radio Rear Side Door Upper Speaker - Left (UQH)

Pin	Size	Color	Circuit	Function	Terminal Type ID	Option
1	—	WH / BK	1959	Left Rear Midrange Speaker [-] Control	I	—
2	—	YE / BN	1859	Left Rear Midrange Speaker [+] Control	I	—
3	—	VT / YE	1958	Left Rear Tweeter Speaker [-] Control	I	—
4	—	GN / YE	1858	Left Rear Tweeter Speaker [+] Control	I	—

Q83AC Valve Lifter Oil Solenoid Valve - Cylinder 3 (L84/L87)



4036662

Connector Part Information

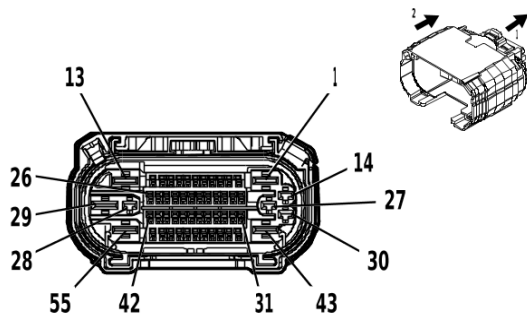
Harness Type: Valve Rocker Arm Oil Control Valve Harness
OEM Connector: 13514238
Service Connector: Service by Harness - See Part Catalog
Description: 2-Way F 1.2 MCON-CB Series, Sealed(BK)

Terminal Part Information

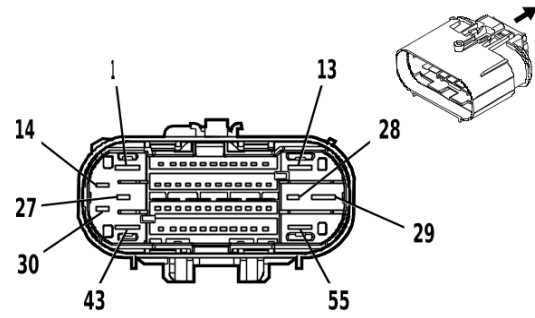
Terminal Type ID	Terminated Lead	Diagnostic Test Probe	Terminal Removal Tool
I	Not required	No Tool Required	No Tool Required

Q83AC Valve Lifter Oil Solenoid Valve - Cylinder 3 (L84/L87)

Pin	Size	Color	Circuit	Function	Terminal Type ID	Option
1	0.5	YE / GY	2493	Cylinder Shutoff Solenoid Enable Signal 3	I	—
2	0.5	GY	5493	Cylinder Deactivation Solenoid Valve Control 3	I	—

X225C Front Floor Console Wiring Harness to Body Wiring Harness (DCH/D07/DCK)

4992168



4993301

Connector Part Information

Harness Type: Front Floor Console Wiring Harness
 OEM Connector: 35016652
 Service Connector: Service by Harness - See Part Catalog
 Description: 55-Way F 1.2 OCS, 2.8, 6.3 CTS Series,
 Sealed(BK)

Connector Part Information

Harness Type: Body Wiring Harness
 OEM Connector: 35205173
 Service Connector: 84727364
 Description: 55-Way M 1.2 OCS, 2.8, 6.3 CTS Series,
 Sealed(BK)

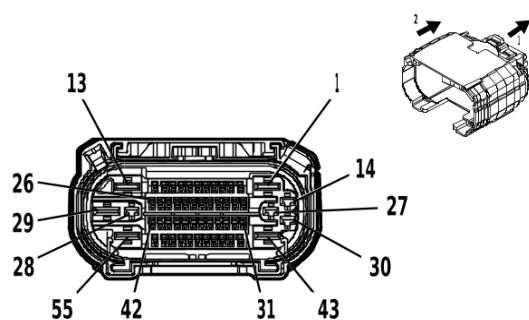
Terminal Part Information

Terminal Type ID	Terminated Lead	Diagnostic Test Probe	Terminal Removal Tool
I	Not required	J-35616-12 (BU)	No Tool Required
II	Not required	J-35616-16 (L-GN)	No Tool Required
II	Not required	J-35616-16 (L-GN)	No Tool Required
III	Not required	J-35616-35 (VT)	No Tool Required
IV	Not required	J-35616-42 (RD)	No Tool Required
V	Not required	J-35616-43 (RD)	No Tool Required
VI	84847992	J-35616-32 (OG)	J-38125-36
VII	84867140	J-35616-13 (BU)	J-38125-215A
VII	84867140	J-35616-13 (BU)	J-38125-215A
VIII	84867141	J-35616-13 (BU)	J-38125-215A
IX	84992391	J-35616-5 (PU)	J-38125-215A

X225C Front Floor Console Wiring Harness to Body Wiring Harness (DCH/D07/DCK)

Pin	Size	Color	Circuit	Terminal Type ID	Option	Function	Pin	Size	Color	Circuit	Terminal Type ID	Option
1	0.5	BK / WH	1351	V	—	Signal Ground	1	0.5	BK / WH	1351	VI	—
2	0.75	BK / WH	1451	II	—	Signal Ground	2	0.75	BK / WH	1451	VII	—
3	0.5	VT / RD	4049	II	—	AC Power Outlet Sensor High Reference	3	0.5	VT / RD	4049	VII	—
4	0.35 0.75	RD / VT RD / VT	6340 6340	I II	DCK-K4C K4C	Battery Positive Voltage Battery Positive Voltage	4	0.75	RD / VT	6340	VII	—

X400 Chassis Wiring Harness to Body Wiring Harness



4992168

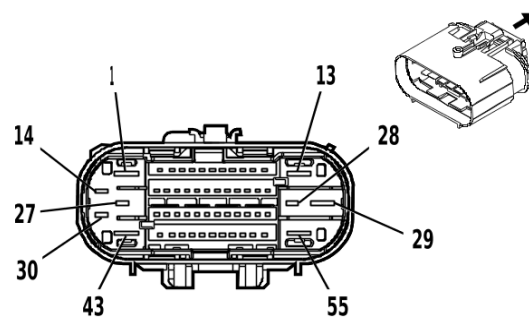
Connector Part Information

Harness Type: Chassis Wiring Harness

OEM Connector: 35333113

Service Connector: 19371185

Description: 55-Way F 1.2 OCS, 2.8, 6.3 CTS Series, Sealed(BK)



4993301

Connector Part Information

Harness Type: Body Wiring Harness

OEM Connector: 35501904

Service Connector: 84727364

Description: 55-Way M 1.2 OCS, 2.8, 6.3 CTS Series, Sealed(BK)

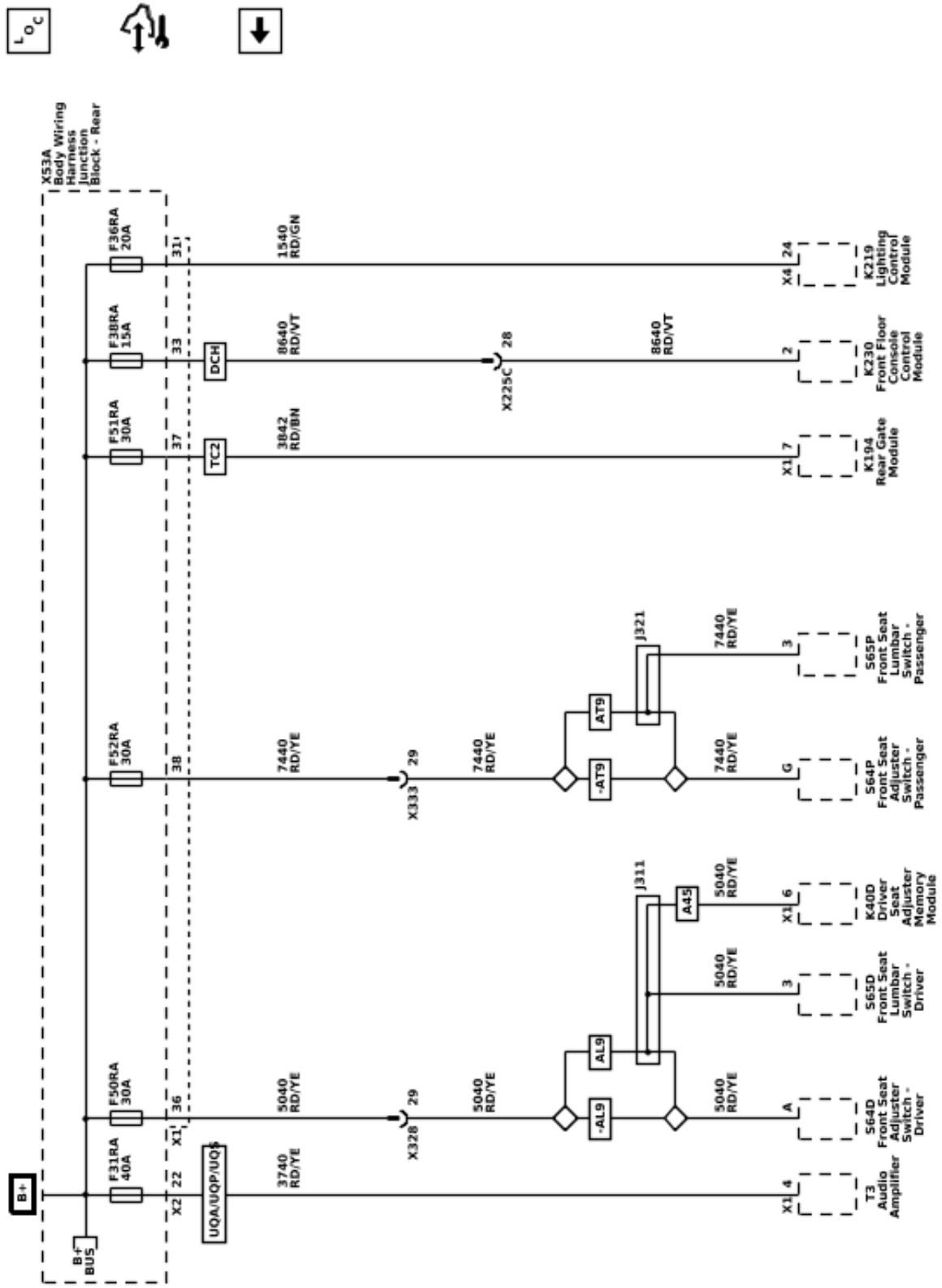
Terminal Part Information

Terminal Type ID	Terminated Lead	Diagnostic Test Probe	Terminal Removal Tool
I	19332901	J-35616-35 (VT)	J-38125-212
II	19370818	J-35616-12 (BU)	J-38125-215A
III	84634921	J-35616-42 (RD)	J-38125-212
IV	84847992	J-35616-32 (OG)	J-38125-36
V	84867140	J-35616-13 (BU)	J-38125-215A
VI	84992391	J-35616-5 (PU)	J-38125-215A

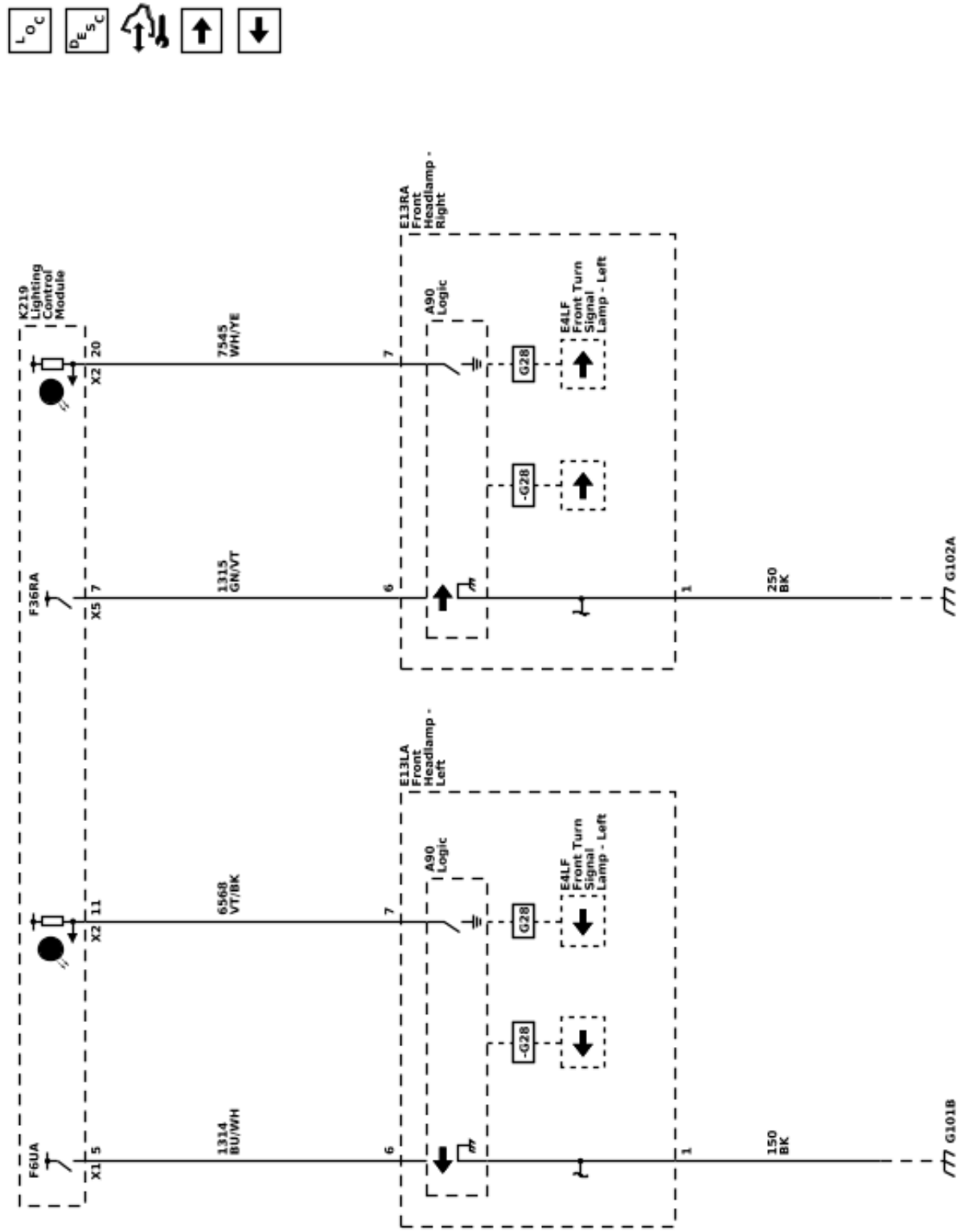
X400 Chassis Wiring Harness to Body Wiring Harness

Pin	Size	Color	Circuit	Terminal Type ID	Option	Function	Pin	Size	Color	Circuit	Terminal Type ID	Option
1	4	GN / VT	1988	III	—	Right Park Brake Motor Apply Control	1	2.5	GN / VT	1988	IV	—
2	0.75	GN / BU	2733	II	—	Brake System Control Module LIN Bus 2	2	0.75	GN / BU	2733	V	—
3	0.5	BU / GY	4054	II	—	Private Serial Data Powertrain CAN Bus [-] Serial Data	3	0.35	BU / GY	4054	V	—
4	0.5	WH	4055	II	—	Private Serial Data Powertrain CAN Bus [+] Serial Data	4	0.35	WH	4055	V	—
5 - 8	—	—	—	—	—	Not Occupied	5 - 8	—	—	—	—	—
9	—	—	—	—	—	Run/Crank Ignition 1 Voltage	9	0.5	VT / WH	639	V	—

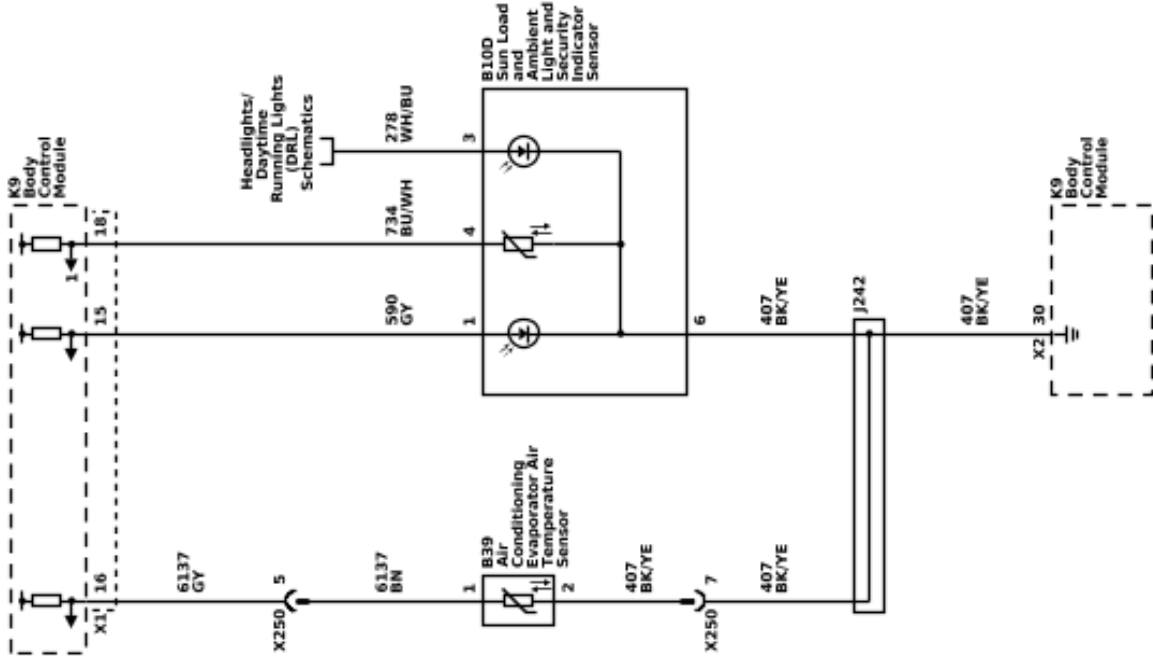
Power Distribution Schematics (F31RA, F36RA, F38RA, F50RA, F51RA, F52RA Fuses)



Exterior Lights Schematics (Turn Signals - Front)



HVAC Schematics (Ambient Light/Sunload Sensor and A/C Evaporator Temperature Sensor)



LOC DESSC ↑ ↓





Master Electrical Component List (cont'd)

Code	Name	Option	Location	Locator View	Connector End View
Q18C	Fuel Pressure Regulator 3	LM2	In the engine compartment, left rear side of engine, above Q18A Fuel Pressure Regulator 1, attached to G18 High Pressure Fuel Pump	Engine Components - Left Front (LM2)	Q18C Fuel Pressure Regulator 3
Q20	Intake Air Flow Valve	LM2	In the engine compartment, left front, to the left of the valve cover	Engine Components - Left Front (LM2)	Q20 Intake Airflow Control Valve
Q22	Intake Manifold Tuning Solenoid Valve	LM2	In the engine compartment, front center, attached to the front of the intake manifold	Engine Components - Left Front (LM2)	Q22 Intake Manifold Tuning Solenoid Valve
Q37LFB	Front Shock Absorber Actuator - Left	Z95	In the left front wheel well, attached to the left front lower control arm and left front strut tower, part of strut assembly	—	Q37LFB Front Shock Absorber Actuator - Left (Z95)
Q37LRB	Rear Shock Absorber Actuator - Left	Z95	In the left rear wheel well, attached to the left rear lower control arm and left rear strut tower, part of strut assembly	—	Q37LRB Rear Shock Absorber Actuator - Left (Z95)
Q37RFB	Front Shock Absorber Actuator - Right	Z95	In the right front wheel well, attached to the right front lower control arm and right front strut tower, part of strut assembly	—	Q37RFB Front Shock Absorber Actuator - Right (Z95)
Q37RRB	Rear Shock Absorber Actuator - Right	Z95	In the right rear wheel well, attached to the right rear lower control arm and right rear strut tower, part of strut assembly	—	Q37RRB Rear Shock Absorber Actuator - Right (Z95)
Q38	Throttle Body	L84/L87	In the engine compartment, at the front of the engine, mounted to the intake manifold inlet	Engine Components - Left Front (L84/L87)	Q38 Throttle Body
Q44	Engine Oil Pressure Control Solenoid Valve	—	In the engine compartment, at the front of the engine, behind the front cover	Engine Components - Right Front (LM2)	• Q44 Engine Oil Pressure Control Solenoid Valve (L87) • Q44 Engine Oil Pressure Control Solenoid Valve (LM2)
Q46	Air Conditioning Compressor Solenoid Valve	—	In the engine compartment, right front, mounted to the right lower side of the engine, part of G1 A/C Compressor	• Engine Components - Left Front (LM2) • Engine Components - Right Front (L84/L87)	Q46 Air Conditioning Compressor Solenoid Valve
Q61	Reductant Fluid Injector	LM2	In the engine compartment, right front, mounted to the exhaust, in front of diesel particulate filter	Engine Components - Right Rear (LM2)	Q61 Reductant Fluid Injector
Q74	Engine Coolant Bypass Valve	LM2	In the engine compartment, left rear, attached to the bottom rear of Q97 Engine Coolant Flow Control Valve	—	Q74 Engine Coolant Bypass Valve (LM2)
Q77A	Transmission Control Solenoid Valve 1	—	Under the vehicle, inside the T12 Automatic Transmission	—	Q77A Transmission Control Solenoid Valve 1 (MQC)