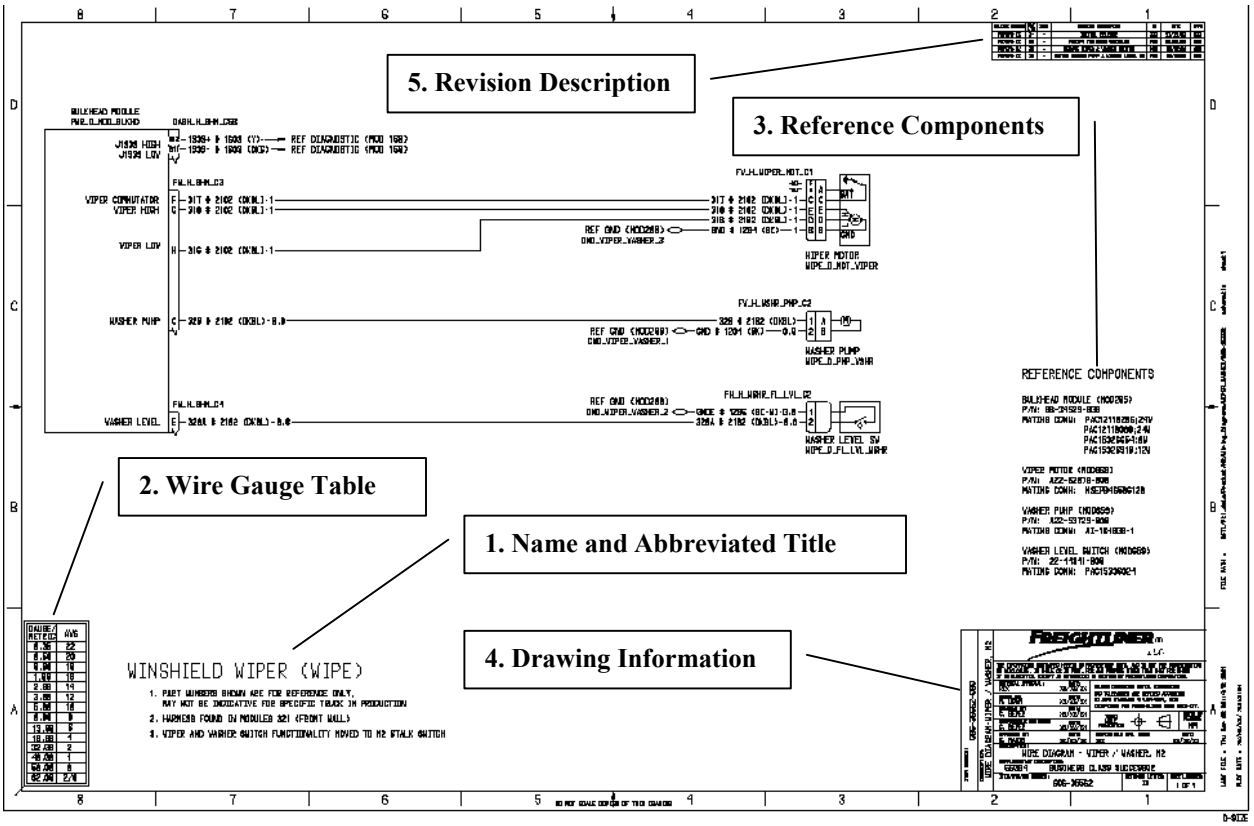
Reading Freightliner Wiring Diagrams

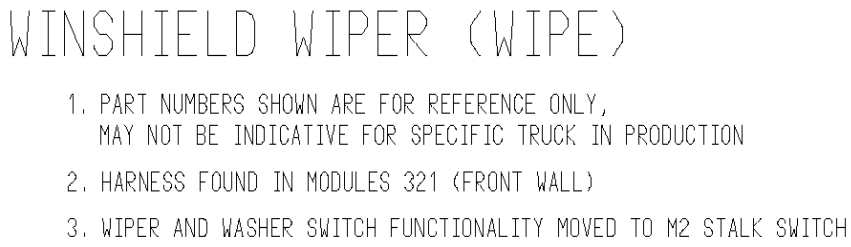
Wiring Diagram Sections

The Freightliner wiring diagrams are divided by system function. This allows for many different options or accessory systems to be installed on the same model truck. Examples for this section are drawn from the diagram below:

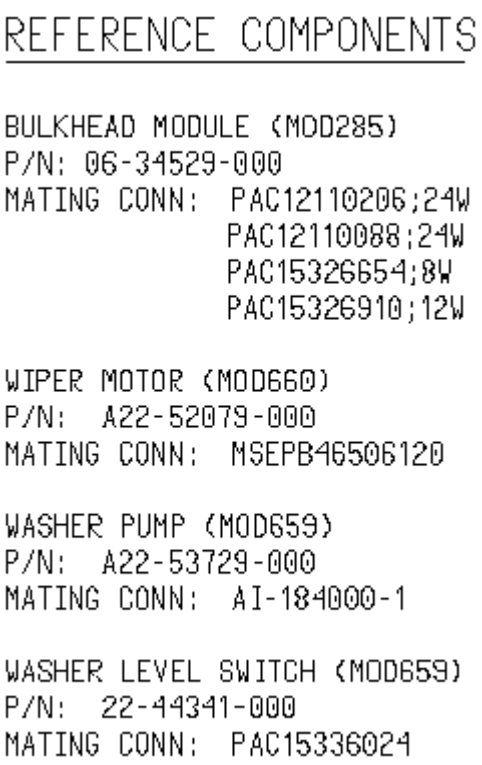


This is an early diagram for Business Class M2 Windshield Wipers (*G06-35562)*

1. Every wiring diagram is labeled with a **Name and Abbreviated Title** of the system illustrated. General diagram notes are also included in this section.



2. The **Reference Components** section is generally on the right side of the diagram. It lists all of the components and connectors shown in the diagram and their part numbers.



3. A **Wire Gauge Table** located in the lower left corner of the diagram. The table lists wire gauges in both metric and AWG (American Wire Gauge) units.

GAUGE/ METRIC	AWG
0.35	22
0.50	20
0.80	18
1.00	16
2.00	14
3.00	12
5.00	10
8.00	8
13.00	6
19.00	4
32.00	2
40.00	1
50.00	0
62.00	2/0

4. The lower right corner contains the **Drawing Information** section. This section includes a wiring diagram number, description, supplementary description, approvals dates and other technical data.

ITEM NUMBER: G06-35562-000

DESCRIPTION: WIRE DIAGRAM-WIPER / WASHER, M2

FREIGHTLINER® LLC

THE INFORMATION CONTAINED HEREIN IS PROPRIETARY DATA, AND IS NOT FOR DISSEMINATION OR DISCLOSURE, IN WHOLE OR IN PART, FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT IS SUBMITTED, EXCEPT AS AUTHORIZED IN WRITING BY FREIGHTLINER CORPORATION.

MATERIAL APPROVAL: XXX	DATE: XX/XX/XX	UNLESS OTHERWISE NOTED, DIMENSIONS AND TOLERANCES ARE DEFINED ACCORDING TO ASME STANDARD Y14.5M-1994, WITH EXCEPTIONS PER FREIGHTLINER EOSM 09E0-K17.	
DRAWN BY: M. DOAN	DATE: XX/XX/XX		
CHECKED BY: C. BEYER	DATE: XX/XX/XX	THIRD ANGLE PROJECTION	UNITS OF MEASURE: MM
RESPONSIBLE ENGINEER: C. BEYER	DATE: XX/XX/XX		
APPROVED BY: S. NADIG	DATE: XX/XX/XX	RESPONSIBLE MFG. ENGR: XXX	DATE: XX/XX/XX

DESCRIPTION: WIRE DIAGRAM - WIPER / WASHER, M2

SUPPLEMENTARY DESCRIPTION: 660B4 BUSINESS CLASS SUCCESSOR

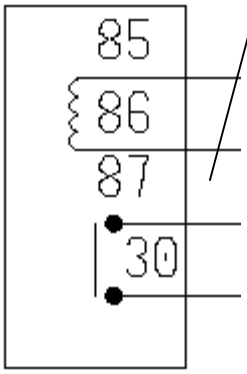
ITEM/DRAWING NUMBER:	REVISION LETTER:	SHEET NUMBER:
G06-35562	XC	1 OF 1

5. The **Revision Description** table is in the upper-right corner of the diagram. When more than one diagram is available for a specific system, use this information to insure the latest revision is used.

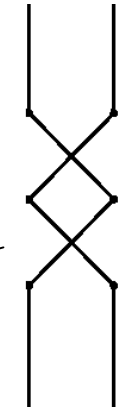
RELEASE NUMBER	REV LTR	ZONE	REVISION DESCRIPTION	BY	DATE	APPD
P07570-XX	X-	-	INITIAL RELEASE	XXX	XX/XX/XX	XXX
P07570-XX	XA	-	MODIFY FOR GEN2 VEHICLES	MND	08/08/00	SCN
P07570-XX	XB	-	REMOVE WIPER & WASHER SWITCH	MND	03/07/01	SCN
P07570-XX	XC	-	REVISE WASHER PUMP & WASHER LEVEL SW	MND	03/19/01	SCN

Wiring Diagram Symbols

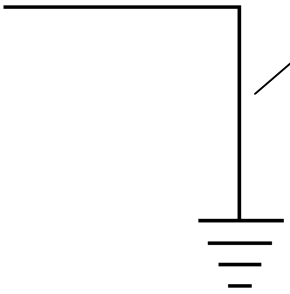
An important part of reading wiring diagrams is identifying electronic symbols illustrated in the diagrams. Some symbols vary from manufacturer to manufacturer so we will concentrate on the symbols used in the wiring diagrams of the Business Class M2.



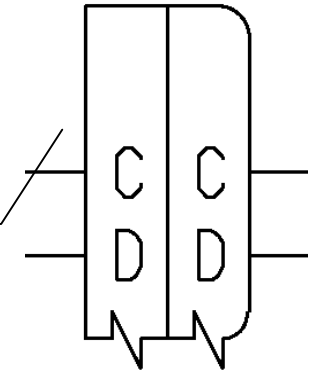
Relay
Notice the control coil connections and normally open contacts.



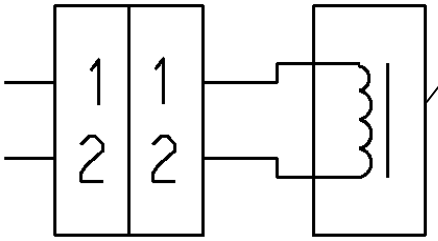
Twisted-pair Wiring
This type of wiring is used to reduce electrical/magnetic interference (EMI) on susceptible circuits like the datalinks.



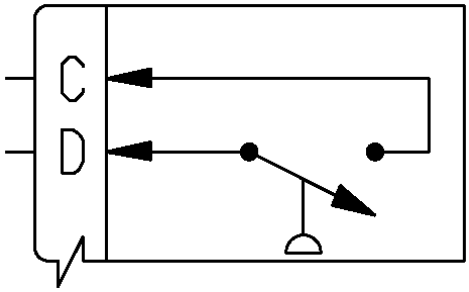
Grounding Point
This shows where wires are connected to metal chassis points.



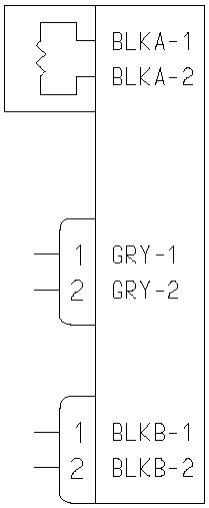
Wiring Connector
Notice the "zigzag" on the bottom indicates that only part of the connector is shown. Also, the 'C' and 'D' indicate terminal labels.



Inductive Pickup Sensor
One example of this 2-terminal sensor is and Anti-lock Brake Speed Sensor.

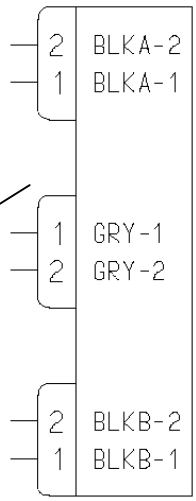


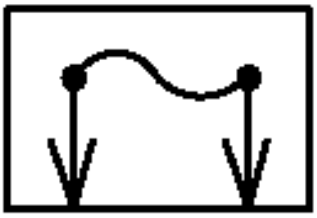
Pressure Switch
This pressure switch is normally open.



J-1939 Datalink Tee Connector with a Terminating Resistor

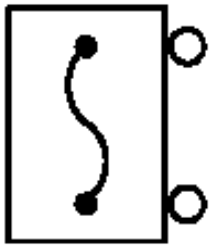
J-1939 Datalink Tee Connector with NO Terminating Resistor

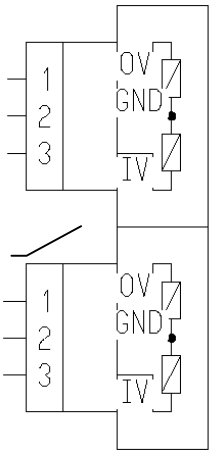




Fuse

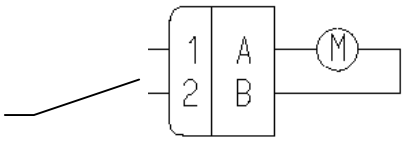
Mega-Fuse
These fuses are used for very high-current applications. They may feed several smaller fuses.



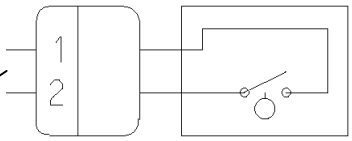


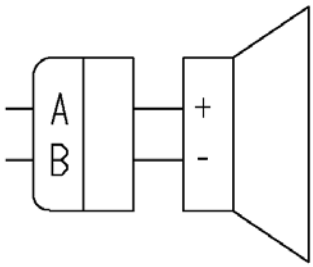
Solenoid Valve Coils
These devices are usually used for pneumatic or hydraulic control, such as in automatic transmissions.

Motor
This is a single speed motor. Multi-speed motors have more terminals.

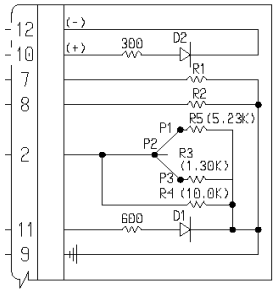


Level Switch
This level switch is normally open.



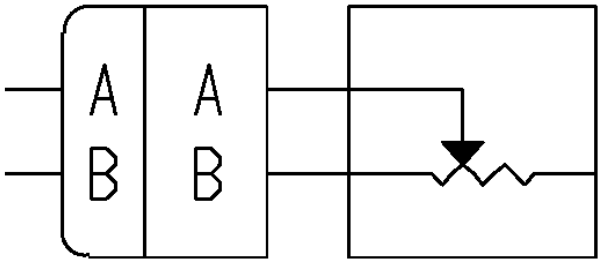


Speaker



Smart Switch
This is a combination device. It contains switches, resistors, and diodes in one package.

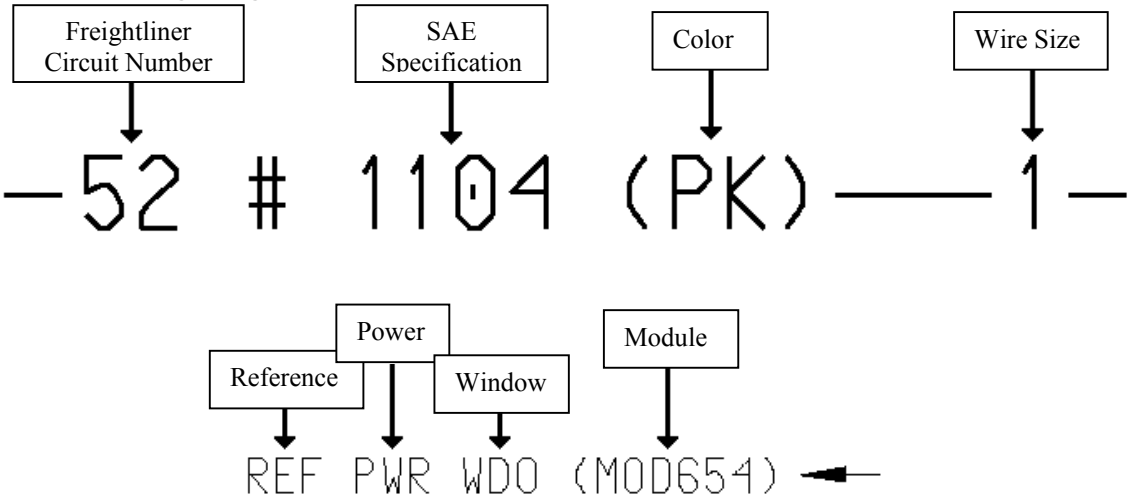
Variable Resistor
This device is generally a sensor, such as for fuel level.



Circuit Identification

The wiring diagrams contain information concerning each individual circuit outlined in the illustration.

The circuit information is inserted in-line with the circuit that it describes. The following diagram describes the information format:



Freightliner Circuit Number

This number stays the same throughout a set of diagrams. So, circuit 52 on one diagram will continue as circuit 52 on other pages.

SAE Specification

The Society of Automotive Engineers (SAE) recommended practice, defines the method of denoting electrical circuits in a wiring diagram.

Wire Color

The color abbreviations are self-explanatory. “DK” means dark, as in “DKBL” means dark-blue. If two colors are listed, the second color is a “trace” (or stripe) color. For example: “BK-W” means black with a white trace.

Wire Size

The wire size is indicated in millimeters. As mentioned previously, each diagram has a conversion table in the lower left corner to convert the sizes to American Wire Gauge (AWG) sizes.

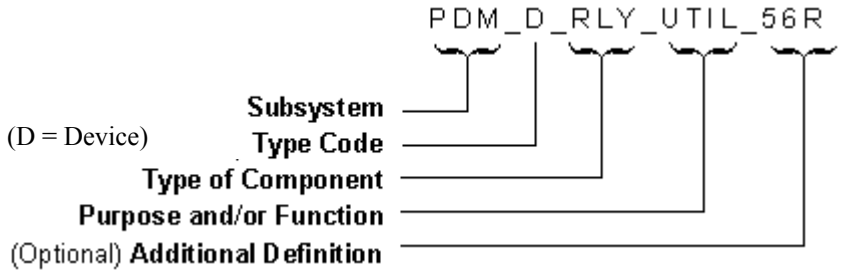
Off-sheet Identification

This circuit identification information is located at a circuit termination point. An arrow or diamond designates that the circuit continues, and a diagram reference and truck model number is printed at the point of continuation. If the circuit continues on to other pages, the information will be repeated on those pages.

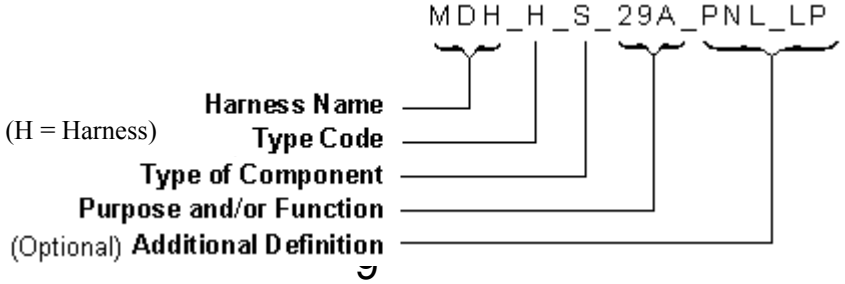
Reference Designators

Reference designators provide information concerning electronic devices and wiring harnesses illustrated on a wiring diagram page. The following table defines identifiers in the reference designators:

Reference Designator	An identifier applied consistently to an application of a component throughout the product documentation.
Subsystem	A grouping of electrical components that belong to a common functional system.
Type Code	A single character code that specifies the type of component a reference designator represents. For example, D for device and H for Harness item.
Harness Item	A component that is normally part of a harness assembly. For example, a connector, terminal and splice are harness items.
Device	A component that uses electrical current and is normally separate from a harness. For example, a switch, relay, circuit breaker, control module and solenoid are devices.



Device Reference Designator



Harness Item Reference Designator

The following list describes the acronym used for various device names:

DEVICE: Common Abbreviations & Acronyms

Full Word	Abbreviation/Acronym
Accessory	ACC or ACCESS
Actuator	(See Solenoid)
Air Conditioning	AC
Alternating Current	AC
Alternator	ALT
Anti-lock Brake System	ABS
Auxiliary	AUX
Axle	AXL
B Pillar	BPLR
Battery	BAT
Block	BLK
Brake	BK
Breaker	(Do not use, See CB)
Bulkhead	BHD
Capacitor	C
Chassis	CHAS
Circuit Breaker	CB
Clutch	CL
Control	CONT or CTRL
Diagnostic	DIGN
Diode	D
Electric(al)	ELEC
Electronic Control Module	ECM
Electronic Control Unit	ECU
Electronic Engine	EENG
Electronics	ELEK
Engine	ENG
Engine Control Module	ECM
Engine Speed	RPM
Forward	FWD
Frontwall (Firewall)	FW
Gauge	GA
Ground	GND
Head	HD
Heater	HTR
Heating Ventilation Air conditioning	HVAC
Ignition	IGN
Indicate (Indicator)	IND
Junction	JCT
Lamp	LP
Left Hand	LH
Light	(Do not use, See LP)
Main	MN
Main Cab Harness	MCH
Main Dash Harness	MDH
Marker	MKR
Motor	MOT
Negative	NEG
Overhead	OVHD
Override	OVRD

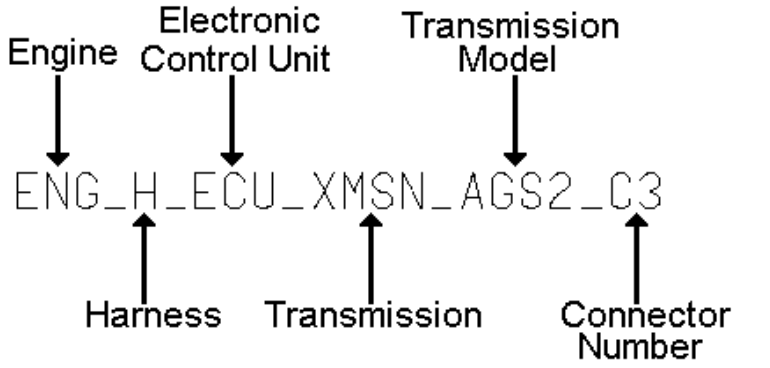
Panel	PNL
Positive	POS
Power	PWR
Pressure	PRESS
Pump	PMP
Rear	RR
Regulator	RGLTR
Relay	RLY
Resistor	R
Right Hand	RH
Rocker	RKR
Sensor	SNSR
Sleeper	SLPR
Solenoid	SOL
Splice	S
Switch	SW
Temperature	TEMP
Terminal	TERM
Throttle	THROT
Transducer	(See Sensor)
Transistor	Q
Transmission	TRANS
Utility	UTIL
Valve	V or VLV
Visor	VSR
Wheel	WHL

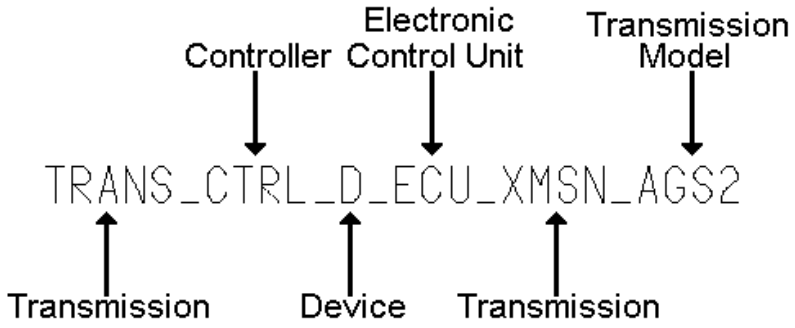
The following list describes the acronym used for various harness names:

HARNESSES: Common Abbreviations & Acronyms

Harness Full Description	Abbreviation/Acronym
Antilock Brake System, Cab Overlay	ABS_CAB
Antilock Brake System, Chassis Overlay	ABS_CHAS
Antilock Brake System, Electronic Control Unit	ABS_ECU
Axle, Forward	AXL_FWD
Axle, Rear	AXL_RR
B-Pillar, Left Hand	B_PLR_LH
B-Pillar, Right Hand	B_PLR_RH
Bunk	BUNK
Chassis	CHAS
Chassis Rear Extension	CHAS_EXT
Dash	DASH
Door, Left Hand	DOOR_LH
Door, Right Hand	DOOR_RH
Electronic Engine, Cab Overlay	EENG_CAB
Electronic Engine, Engine Overlay	EENG_ENG
Engine	ENG
Front Wall (Firewall)	FW
Main Dash Harness	MDH
Overhead, Forward	OVHD_FWD
Overhead, Rear	OVHD_RR
Sleeper	SLPR
Transmission, Cab Overlay	TRANS_CAB
Transmission, Chassis Overlay	TRANS_CHAS
Utility Lamp, Back of Cab Overlay	UTIL_BOC
Utility Lamp, Dash Overlay	UTIL_DASH
Visor	VSR

Examples of reference designators:





Some of the information contained in the reference designator points to a list of "Reference Components" on the right side of the page.

Component part numbers and related harness connector numbers are included in this list.

REFERENCE COMPONENTS

BULKHEAD MODULE (MOD285)
P/N: 06-34529-000
MATING CON: PAC15326917;14W

MERCEDES TRANSMISION MODULE-AGS2
P/N: C07-00036-009
MATING CON: AI-1355328-1;2W
AI-1355222-1;21W

SMART SHIFT DISPLAY
P/N: POL 32233 04
MATING CON: AI-172168-1

SMART SHIFT CONTROL
P/N: 06-31252-000
MATING CON: PAC12047781