



Mercedes-Benz

Transporters • Electrical System  
VITO/VIANO (Model 639)

Wiring Diagrams

Technical training for Customers



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# Wiring Diagram Manuals Part Number: Z6517 2111 02

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Printed in England

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Publisher: Mercedes-Benz CV Electrics & Telematics Team

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Note:

The term »employees« does not imply any preference of gender and incorporated male and refers to male and female employees alike.

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# Use of Wiring Diagrams

## Chapter 1

OV00.01-S-1901-03VA	Use of wiring diagrams		
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Wiring diagrams

/ The wiring diagrams are assigned to the familiar function groups 00-91. The systems are listed alphabetically with an indication of the function group/ function subgroup in the "Search aid for all wiring diagram groups"

OV00.01-S-1901VA or A3 (paper version).

/ The wiring diagrams are filed in the respective function group arranged according to the PE number,

e.g.: PE07.16-S-2000VA

PE07.16-S-2000IVB

To check the completeness of the volume the sequence of the wiring diagrams filed can be seen from the lists of contents of the respective function group. For supplements the wiring diagrams should be filed as per the supplement sheet.

e.g.: PE00.19-P-1100VA Overview of wiring diagrams....

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/ The wiring diagrams are prepared as function diagrams or control unit diagrams and are built up as follows:

-Function diagrams

The control units and electrical components belonging to the function are shown as symbols. The functional connections are realized by direct lines or by the data bus.

-Control unit diagrams

Control units are represented complete with all connected components. The feed of the control units appears first.

The wiring diagrams also contain linkages of possible versions and functions.

Linkages, recognizable as versions, are framed and provided with an abbreviated designation/ abbreviation.

The versions are designated with 1 and 2

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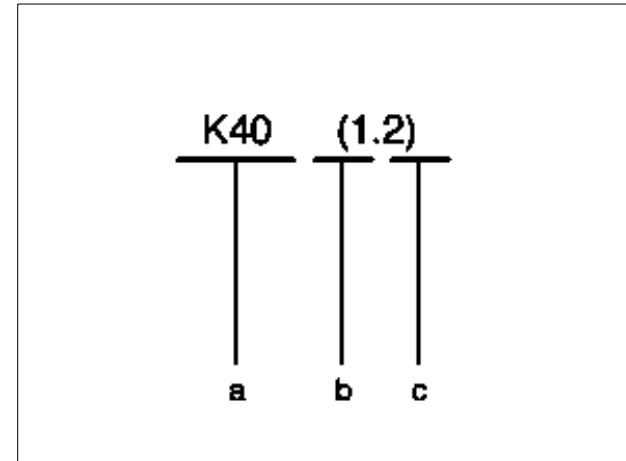
/ Notes on the accompanying documents for connectors/ terminal blocks (B1)

Special equipment (SA) is specifically highlighted in the notes column. For connectors, which are installed in special equipment, the special equipment is specified in the notes column in the row in front of the connector designation. For connectors, which are installed as standard, special equipment specification is noted directly at the respective jack and/or connector.

The feed of the terminal blocks is shown by means of an arrow pointing to the left, the outputs by means of arrows pointing to the right. The grouping of the individual variants/ special equipment (SA) is highlighted by means of broken lines. All outputs to components, which are installed as standard, are listed up to the first broken line.

### Connection designation

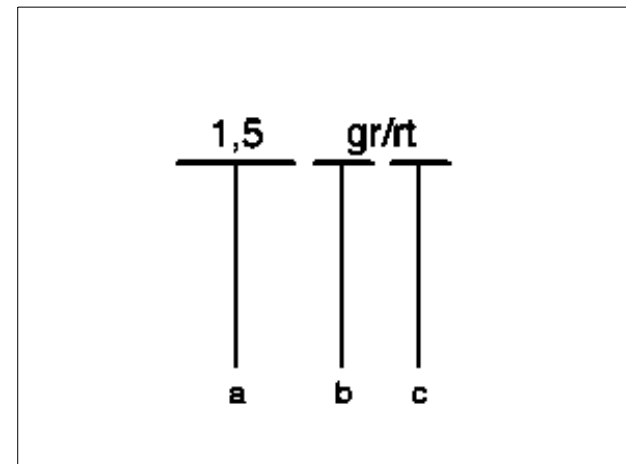
- a Component
- b Clutch
- c Socket



P00.19-0402-01

### Wire designation

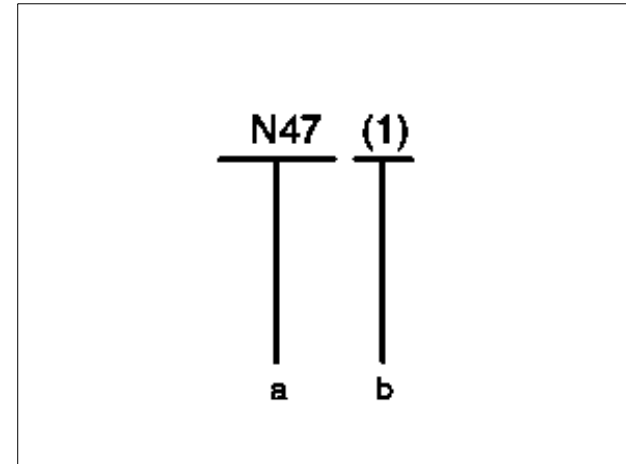
- a Conductor cross-section in mm<sup>2</sup>
- b Basic color
- c Identification color



P00.19-0403-01

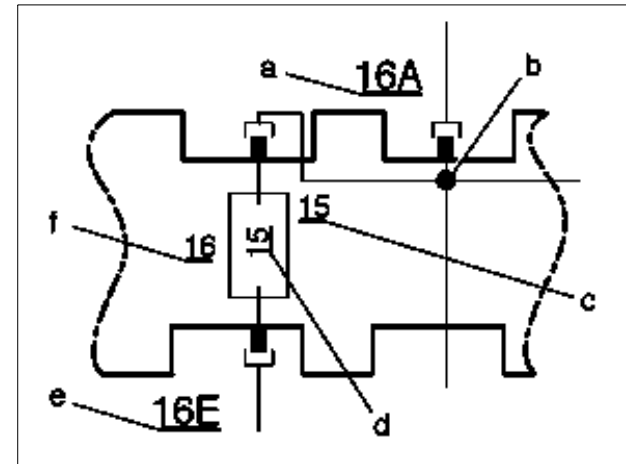
### Identification of truncated wires

- a Component to which the truncated electric line leads
- b Connection designation on component



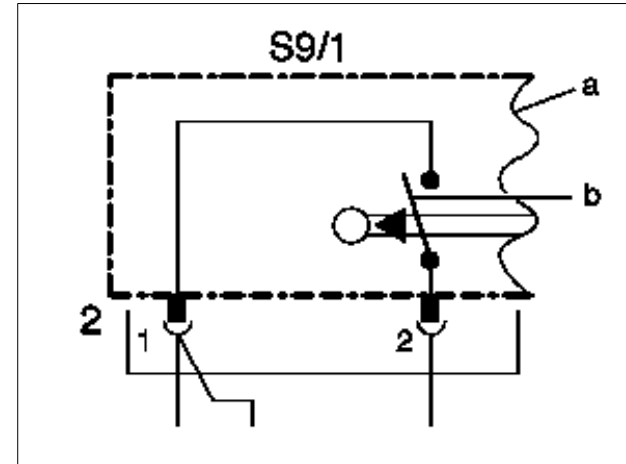
### Fuse blocks

- a Receptacle numbering, output (A, B, C or D)
- b Line bridge
- c Terminal designation
- d Fuse rating in amp(s)
- e Receptacle numbering, input (E)
- f Fuse number

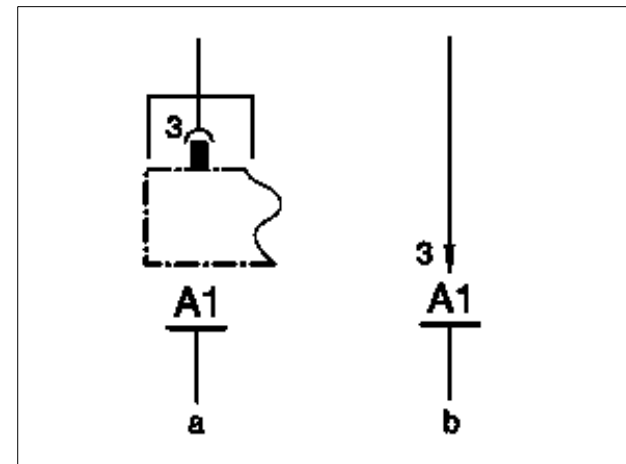


## Components and switches

- a Component which are not represented completely are shown dismantled.
- b Switching contacts are shown in the rest position.



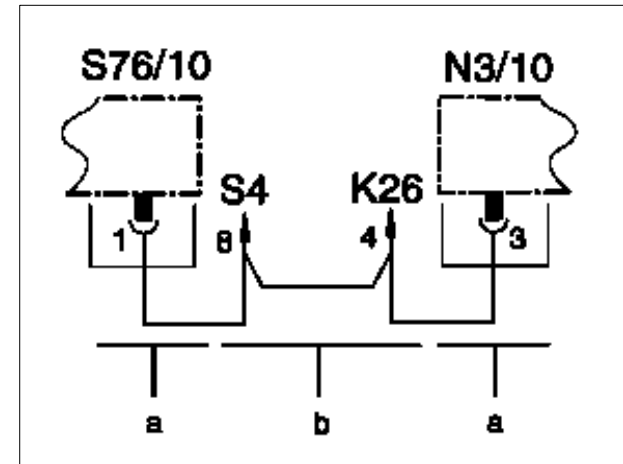
- a Illustration of a function-specific component with connection designation and corresponding line
- b Illustration of a function-independent component connection with corresponding line





### Looped lines

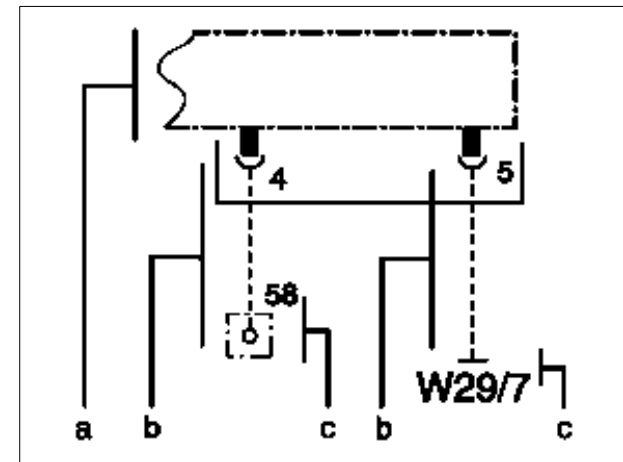
- a Function-specific components
- b The looped line connects two function-specific components across one or more function-independent component connections.



P00.19-2089-01

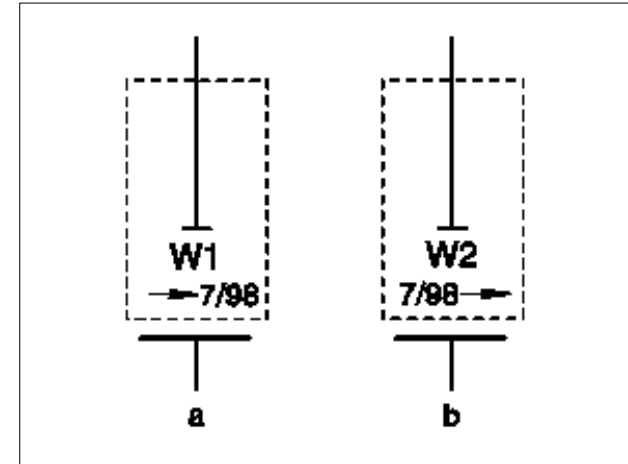
### Indirect line (only for terminal 31 or terminal 58)

- a Function-specific component
- b Indirect line for more than two intermediate function-independent component connections/ loops.
- c Connection to either terminal 31 or terminal 58



Installation date

- a Installation of a component up to date
- b Installation of a component as of date



P00.19-2094-01

BK	=	Black	=	black
BN	=	Brown	=	brown
BU	=	blue	=	blue
GN	=	green	=	green
GY	=	gray	=	gray
OG	=	orange	=	orange
PK	=	pink	=	pink
RD	=	red	=	red
TR	=	transparent	=	transparent
VT	=	violet	=	violet
WH	=	white	=	white
YE	=	yellow	=	yellow

# Abbreviations for Wiring Diagrams

## Chapter 2

OV00.01-S-1001-27VA	Abbreviations for wiring diagrams	MODEL 639.601/603/605/701/703/ 705/711/713/811/813/815	
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Abbreviation	Designation	Code	FG.FUG
AB	Airbag		91.00
ABL	Exterior lights		82.10
ABS	Antilock brake system		42.30
AT	Automatic transmission	G40 - Automatic transmission	27.19
AHV	Trailer hitch	Q22 - Fixed trailer hitch Q50 - Trailer hitch with detachable ball head	31.19
AKC	Anti-knock control		
ACSR	Automatic child seat recognition		91.60
BCAPC	Barometric pressure/charge air pressure compensation		
APS	Auto pilot system	EN2 - Auto pilot system with TMC interface EN4 - Auto pilot system with TMC interface, large display EN9 - Auto pilot system for Japan, large display	82.61
EGR	Exhaust gas recirculation		14.20
ART	Adaptive cruise control	IN18 - Distronic	
DSV	Drive authorization system shutoff valve (DSV)		80.35
ASR	Acceleration slip regulation	BB3 - Electronic Stability Program (ESP)	42.40
ATS	Antenna systems		82.62 82.70
BAS	Brake Assist	BB3 - Electronic Stability Program (ESP)	42
CDI	Common rail diesel injection		07.16
CDC	CD changer	EP5 - CD changer	82.64
D2B	Digital data bus	EH3 - Portable CTEL preinstallation linked to D2B network	82

OCP	Overhead control panel control unit	LD0 - Dome lamp with reading lamp for driver/front passenger	54.21
DTR	Distronic (adaptive cruise control)	IN18 - DISTRONIC	
EDC	Electronic diesel control		07.16
EDS	Electronic diesel system		07
ATA	Anti-theft alarm system	FZ5 - Anti-theft alarm system	80.50
EFH	Power windows		72.29
ISC	Electronic idle speed control		07
ELC	Electronic level control	CL0 - Rear lowerable/raisable air suspension	32.33
ESP	Electronic stability program	BB3 - Electronic Stability Program (ESP)	42.45
ESA	Electric seat adjustment	SF1 - Electrically adjustable luxury driver seat	91.00
DFI	Diesel injection system (electronic distributor-type fuel injection)		07.16
EIS	Electronic ignition switch control unit		54.21
RFL/IRCL	Radio frequency locking/infrared remote central locking	FZ5 - Anti-theft alarm system	80.50
HFS	Hands-free system		82.70
GPS	Global positioning system		
ETR	Emergency tensioning retractor		91.00
HEAT	Automatic heater		83
HFM-SFI	HFM sequential multiport fuel injection/ignition system		07.61
HHS	Heated rear window		67.29
IRCL	Infrared remote central locking		80.20
IMS	Interior motion sensor		80.50
TWC	Catalytic converter		07
IC	Instrument cluster		54.30
AAC	Automatic air conditioning	HH4- Automatic air conditioning	83.00
LHD	Left-hand drive vehicle		
ISC	Idle speed control		
LS	Power steering gear		

HRA	Headlamp range adjustment		82.10
ME-SFI	ME-SFI fuel injection and ignition system		07.61
MT	Manual transmission		
MOST	Media Oriented System Transport		82
REST	Residual engine heat utilization system		
OSL	Orthopedic seat backrest		
PTS	Parktronic system	EZ8 - Parktronic System (PTS)	54.65
RHD	Right-hand drive vehicle		
SR	Tilting/sliding roof	D24 - Glass tilting/sliding roof in passenger compartment D27 - Glass tilting/sliding roof in driver compartment	54.21 77.20
HS	Heated seats	H15 - Heater for front passenger H16 - Heater for driver seat	91.00
SOUND	SOUND systems		82.85
SPH	Mirror heater		88.79
HCS	Headlamp cleaning system		82.35
STH	Stationary heater	H12 - Warm water auxiliary heater H85 - Preinstallation for auxiliary heater HZ1 - Warm air auxiliary heater (Westfalia)	83.70
TEL	Telephone	EH3 - Portable CTEL preinstallation linked to D2B network JV4 - Portable CTEL telephone preinstallation	82.70
TELE AID	Telematic Alarm Identification on Demand (emergency call system)	EZ9 - Car telephone emergency call system (Tele Aid)	
DCU	Door control unit		72.29
HB	Heater booster	HZ9 - Heater booster	83.70
CL	Central locking		80.20

OV00.01-S-1001-28VA	Abbreviations of signal and circuit designations for wiring diagrams		
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Abbreviation	Designation	Notes
(+)	Positive	
(-)	Negative	
15	Switched positive	
30	Battery voltage, positive (continuous positive)	
31	Return line to battery negative or ground, direct	
49	Turn signal generator input	
49a	Turn signal generator output	
49L	Left turn signal lamp	
49R	Right turn signal lamp	
50	Starter control (direct)	
55	Front fog lamp	
56	Headlamp light	
56a	High beam and high beam indicator	
56b	Low beam	
58	Position, tail, license plate and instrument lamps	
58d	Variable instrument/switch illumination	
61	Alternator monitor	
85	Negative or ground winding end	
86	Start of winding	
87	Input	
87a	First output (NC side)	
87b	Second output	
87c	Third output	
A-CDW-SIG	CD-player with changer signal	

A-P-EV1	Output - pulse width signal - injection valve, cyl. 1	
A-P-EV2	Output - pulse width signal - injection valve, cyl. 2	
A-P-EV3	Output - pulse width signal - injection valve, cyl. 3	
A-P-EV4	Output - pulse width signal - injection valve, cyl. 4	
A-S-LSHVK	Output - shift signal - oxygen sensor heater	
A-S-RPR	Output - fuel pumps signal - relay	
A-STAR	Output - starting relay	
A-T-LUES	Output, fan control	
A-ZUE1	Output, ignition coil 1	
A-ZUE2	Output, ignition coil 2	
AE	Trailer recognition	
AKSE (CSD)	Automatic child seat recognition (ACSR)	
AL	Exit lamp	
AS	Towing sensor	
ASS/IRS	Towing sensor/interior protection	
ASV 1	Intake solenoid valve 1	
ASV 2	Intake solenoid valve 2	
Autom. Ant.	Automatic antenna	
A_AGR	Actuation of exhaust gas recirculation positioner	
A_ANR	Output, fuse and relay box	
A_Dachz_1	Roof sign lamp	
A_Dachz_2	Roof sign lamp	
A_DKS	Intake air throttle valve actuator	
A_DRV	Grounded output, pressure regulator valve	
A_EC_Daten	Mirror taximeter	
A_EKA	Actuation of inlet port shutoff switchover valve	
A_EKP	Actuation of inlet port shutoff switchover valve	
A_IRS_2_ALARM	Interior protection	
A_IRS_2_ALARM	Output, alarm	
A_KEH	Grounded output, vent line heater element	



A_Kl.31_MIC	Voltage supply, microphone ground	
A_LDR	Grounded output, boost pressure control pressure transducer	
A_LED_Funk	Roof sign switch LED	
A_LSH1	Output, O2 sensor, upstream from TWC	
A_Mute	Radio muting	
A_RS485_H	RS 485 interface, high signal	
A_RS485_L	RS 485 interface, low signal	
A_TEL_Mute	Telephone muting	
A_VDK	Actuation of intake air throttle valve actuator	
A_Wegstr_SPT	Output, mirror taximeter vehicle speed signal	
A_ZME	Grounded output, quantity control valve	
B -	Battery negative	
B+	Battery positive	
B-D-DIAK	Bus - data transfer - diagnosis (K-line)	
BBVVR	Brake wear, right front	
BF	Front passenger	
BFT	Front passenger door	
BLS	Stop lamp switch NO contact	
BS	Stop lamp switch NC contact	
BSA (17, ADXL76)	Acceleration pick-up (piezoelectric, micromechanical)	
CAN (H)	CAN (high)	
CAN (L)	CAN (low)	
CD	Compact Disc	
CDW Bus	CD changer bus	
CDW Masse	CD changer ground	
CDW Steuerung	CD changer control	
CDW Versorg.	CD changer supply	
Cod. RXD	Coding for service bus (RXD)	
Cod. TXD	Coding for service bus (TXD)	
CROA	Crash output, analog	

D-	Dynamo, negative	
D+	Dynamo, positive	
D2B IN	Input, digital data bus	
D2B OUT	Output, digital data bus	
Daten IR	Infrared	
DBE	Overhead control panel	
DFA hi.li.	Rpm sensor output, left rear	
DFA hi.re.	Rpm sensor output, right rear	
DFA-HR	Rpm sensor output, right rear	
DFHL	Rpm sensor, left rear	
DFHR	Rpm sensor, right rear	
DFVL	Rpm sensor, left front	
DFVR	Rpm sensor, right front	
Diag.	Diagnosis	
Diag. Sthzg	Stationary heater diagnosis	
DRS-1	Yaw rate and lateral acceleration sensor	
DRS-AY	Yaw rate and lateral acceleration sensor	
DRS-Ref	Yaw rate and lateral acceleration sensor	
DRSS	Yaw rate and lateral acceleration sensor	
DS	Pressure switch	
E-A-Crash	Input - analog signal - crash	
E-A-Kupp.	Input - analog - clutch switch	
E-A-LSVK	Input - analog - oxygen sensor	
E-A-TMOT	Input - analog - coolant temperature	
E-F-KS	Input frequency - knock sensor	
E-F-KWDGB	Input frequency - crankshaft sensor	
E-F-NWHG	Input frequency - camshaft Hall sensor	
E-S-AUS	Input - shift signal - off	
E-S-FSMOEL	Input - signal - oil fill level and temperature	
E-S-KSK	Input - shift signal - control shift contact	

E-S-S+B	Input - shift signal - set plus accelerate	
E-S-S-B	Input - shift signal - set - accelerate (decelerate)	
E-S-v. Begr.	Input - signal - variable limit	
E-S-WA	Input - shift signal - resume	
ED	Duty cycle	
EDW D	ATA data	
EDW M	Ground	
EDW-ZA	ATA state display	
EHD	Electrohydraulic pressure supply	
ELV Magnetabsch.	Solenoid switch for electric steering adjustment	
ELV-Daten	Electric steering lock control unit data	
EMV	Electromagnetic compatibility	
ENR-OFF	Actuation of level control lock-out switch LED	
ER	Capacitor	
ESG	Electrical control unit	
E_AT_NOTA	Input, emergency alarm system activate button	
E_Dachz/Funk_UBF	Input, roof sign switch	
E_DPF	Input, pressure differential sensor CAT (NAFTA)	
E_HFM	Input, mass air flow sensor hot film	
E_HFM2	Input, mass air flow sensor hot film	
E_HFMT1	Input, mass air flow sensor hot film, temperature 1	
E_IRS_2_DATAS	Signal, interior protection sensor, rear	
E_KIK	Input, kickdown switch pedal value sensor	
E_KT_Dachz/Stat WLH_WVC	Input, taximeter	
E_KUP1	Input, clutch pedal switch	
E_KW+	Signal, crankshaft position sensor	
E_KW-	Signal, crankshaft position sensor	
E_LDF	Input, charge pressure sensor	
E_LSH1	Input, O2 sensor, upstream from TWC	

E_LSA1	Input, O2 sensor, upstream from TWC	
E_LSIP1	Input, O2 sensor, upstream from TWC	
E_LSIP2	Input, common rail high pressure pump	
E_LSUN1	Input, O2 sensor, upstream from TWC	
E_LSTM1	Input, O2 sensor, upstream from TWC	
E_MOK	Input, oil sensor (oil level, temperature and quality)	
E_NWDG	Input, Hall sensor for camshaft	
E_P1	Input, pressure sensor, downstream from air filter	
E_P3	Input, charge pressure sensor	
E_PWG1	Input, pedal value sensor	
E_PWG2	Input, pedal value sensor	
E_RDS	Input, rail pressure sensor	
E_RT_NOTA	Input, emergency alarm system cancel button	
E_Sitz_Bel/Stat ASD_WVC	Input, pop-up roof (Westfalia)	
E_T1_2	Input, mass air flow sensor hot film	
E_TANS	Input, charge air temperature sensor	
E_TKS	Input, fuel temperature sensor	
E_TMOT	Input, coolant temperature sensor	
E_WSG	Input, fuel filter water level sensor	
F	Driver	
FMEA	Failure mode and effect analysis	
FSB	Parking brake	
FT	Driver door	
FTA	Failure tree analysis	
Fz	Vehicle	
GAL	Speed-dependent volume control	
Gnd. RF-Ant.	Ground, radio frequency antenne	
GPS-Ant.	Global positioning system antenna	
GS	Emergency tensioning retractor	
GSL	Seat belt buckle	