



Body and Accessory Fitment Guide

Actros 5 and Arocs 5

Mercedes-Benz
Trucks you can trust



Body Accessory Fitment Guide

Actros 5 and Arocs 5

Dear reader,

This brochure provides an overview of the most important interfaces and pre-installations for the **Actros 5 and Arocs 5 vehicle model series (963.x/964.x)**, covering the electrical systems, lights and chassis/body.

This brochure is intended for body manufacturers. Further information can be found in the Body/Equipment Mounting Directives, other information sources and guides listed throughout this brochure, as well as in the Mercedes-Benz Bodybuilder Portal.

The information provided in this brochure corresponds to the current state of the art at the copy deadline of **April 2020**. Certain information may therefore differ from a more recent series production configuration. The content is not legally binding.

Disclaimer

By using this brochure, you acknowledge and agree that it your responsibility to ensure that any modification or body that you carry out or affix to your vehicle (as the case may be) complies with all applicable laws, regulations and any other relevant requirement of a regulator or an authority. You are responsible for ensuring that the modifications or body do not affect the vehicle's safety, or the safety of the driver, any passengers or other road users; roadworthiness or insurability.

You also acknowledge and agree that modifying a vehicle or affixing a body to the vehicle by a person/s who is not qualified and does so can be extremely dangerous (including but not limited to death, personal injury and property damage), and you understand and expressly agree to use the information in this brochure at your sole risk. You agree to be solely responsible for any loss or damage (direct or indirect) that results from the improper use or misuse of this brochure. If the directives in this brochure are not followed, the operating safety of the vehicle could be jeopardised. In the event incorrect conversions and/or changes are made to the vehicle, it may increase the risk of an accident, injury and death to the driver, passengers and other road users. You are liable for any damage to any parts, componentry or systems caused by modifying the vehicle or affixing a body. It is important to note the technical guidelines and standards provided in this brochure only describe a minimum standard for the purposes of product safety and liability. You acknowledge and agree to use your own initiative and check whether there are other safety-related risks associated with the use of the vehicle, body or other modifications, which are not contained in this brochure.

To the maximum extent permitted by law, Daimler Truck and Bus Australia Pacific Pty Ltd assumes no responsibility for the accuracy, completeness, currency or reliability of the information provided, and all implied guarantees, warranties, conditions and claims (whether express or implied) arising out of or connected with this brochure are hereby excluded. Illustrations and drawings within the brochure are examples only for illustrative purposes to explain the texts and tables.

The contents of the brochure are not and should not be regarded as legal advice; users should seek their own legal advice if and when appropriate.

The specifications contained in the Mercedes-Benz body/equipment mounting directive relating to mountings, bodies, installations and conversions must be observed!

>>> This printout is not subject to the update service. <<<



General Information

Mercedes-Benz Flange Head Bolts

Mercedes-Benz flange head bolts are one-time use only. Once they have been loosened they must be replaced with new bolts. Failure to do so will result in an inadequate clamping force.

Tapping of Lines to Control Units

It is prohibited to modify or make additional connections at the lines to control units. The control unit could malfunction. Required information, such as a vehicle speed signal, can be retrieved using the Parameterizable Special Module or dedicated bodybuilder connections detailed later in this document.

Under no circumstances can additional connections be made at the vehicle CAN!

Additional Inductive Resistors (e.g. solenoid valves)

If additional inductive resistors are retrofitted to tractor and trailer vehicles (e.g. solenoid valves), the freewheeling current when switching off must be conducted along a defined route, otherwise voltage spikes in excess of -150V can cause damage to the vehicle's electronics. Relays with freewheeling diodes or freewheeling resistors must be used.

When using inductive resistors with a diode as the freewheeling path, it must be ensured that polarity reversal of the operating voltage (e.g. reversed polarity when jump-starting) does not cause irreparable damage to the freewheeling path or to other components.

Mercedes-Benz Genuine Parts

Genuine Mercedes-Benz Parts have been developed to be an integral part of the vehicle, and therefore should be the first choice. Further information on genuine parts can be found in the Body/Equipment Mounting Directives, Bodybuilder Portal ("Engineering and information" => Choose Model Range => "Interface Parts"), and through the Mercedes-Benz Trucks dealer network. https://www.mercedes-benz-trucks.com/en_AU/home.html

Mercedes-Benz Bodybuilder Portal

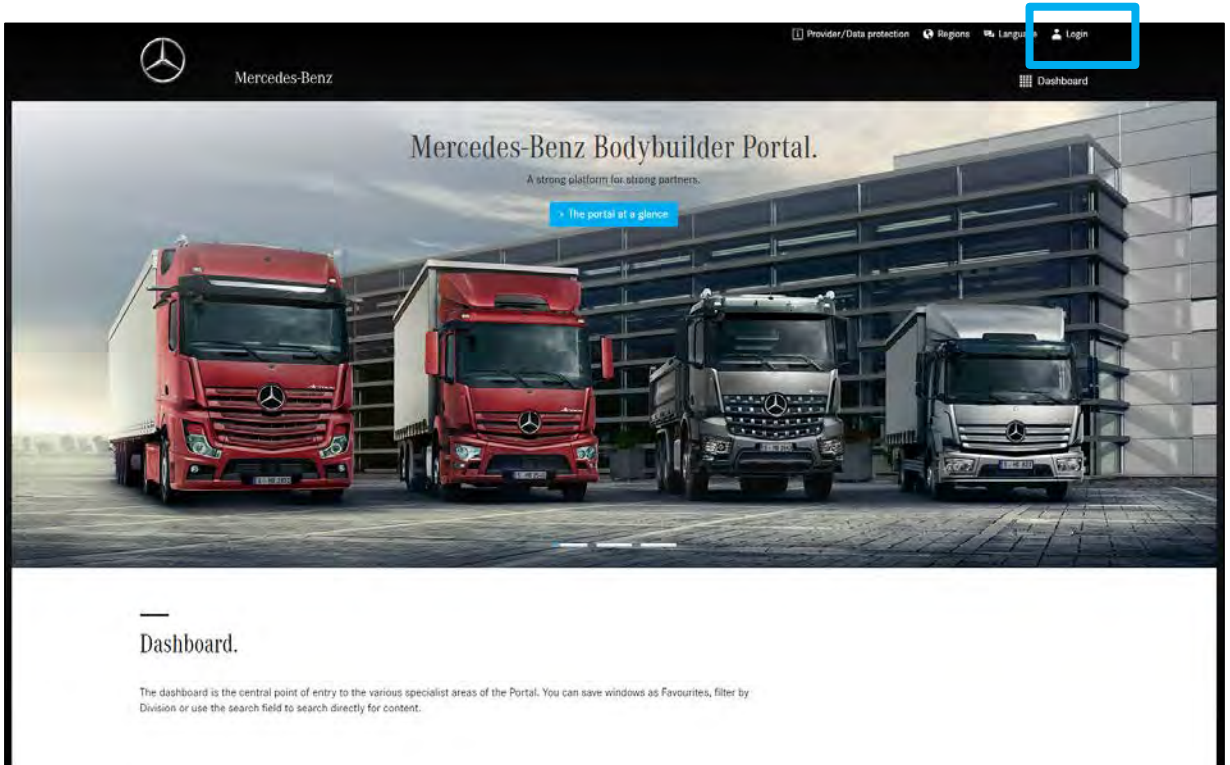
Accessing the Portal:

Go to <https://bb-portal.mercedes-benz.com/>

Some important information, including the Body/Equipment Mounting Directives, is available without registration. However, for maximum benefit, registration is recommended.

To register:

1. Click on Login in the top right corner of the screen
2. Click Register Now
3. Follow the instructions based on your business type



Login

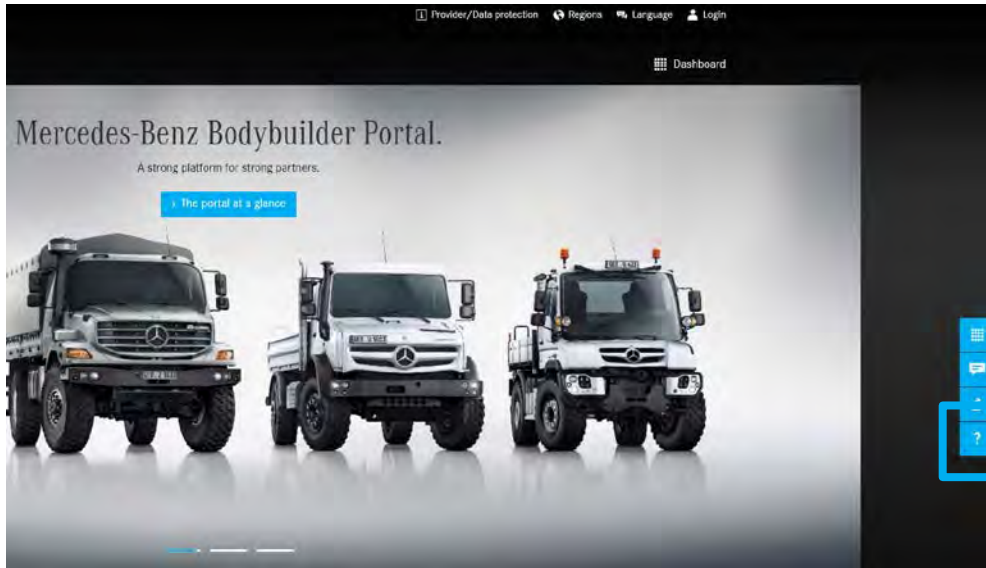
Username:

Password:

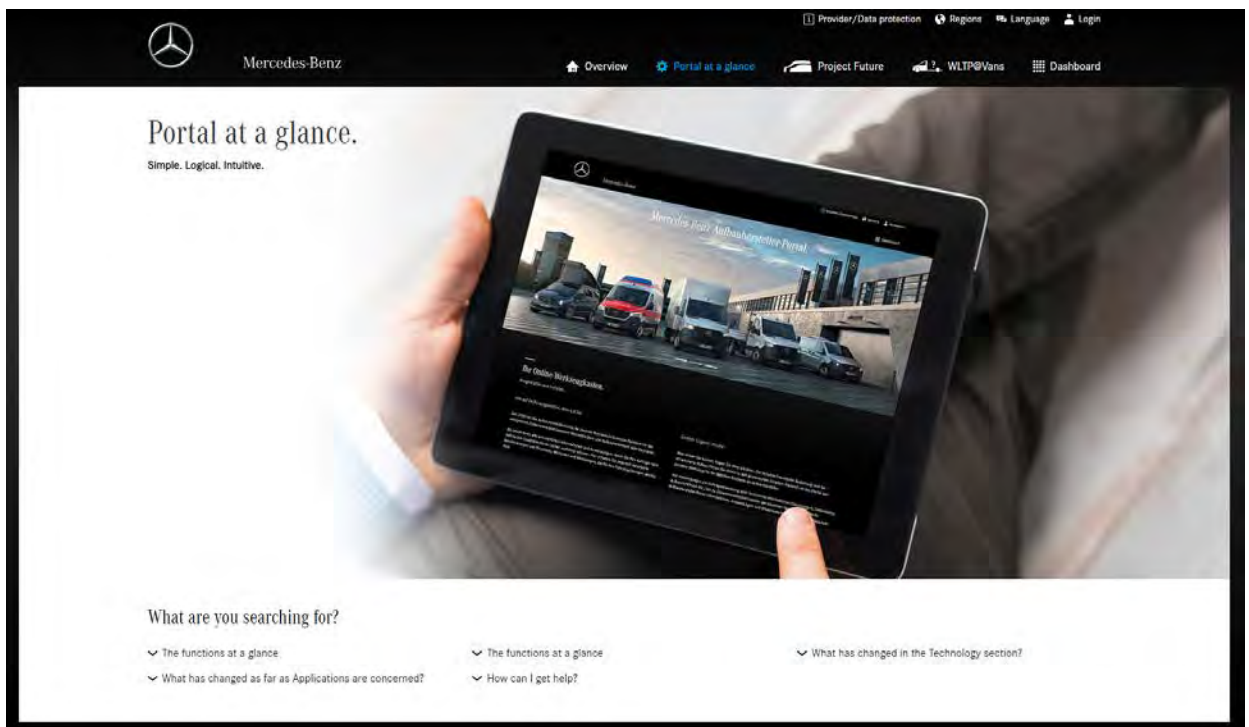
[> Register now](#) [> Renew password](#)

Mercedes-Benz Bodybuilder Portal

To find out more about the Portal, click the Help icon on the right hand side of the screen.



You can then see the Portal at a Glance, and learn what information is available and where to find it.



Connection strip for compressed air tap

The **Actros 5 and Arocs 5 (Bm 963/964)** model series are equipped as standard with compressed air distribution strips for auxiliary consumers in the cab and on the chassis.

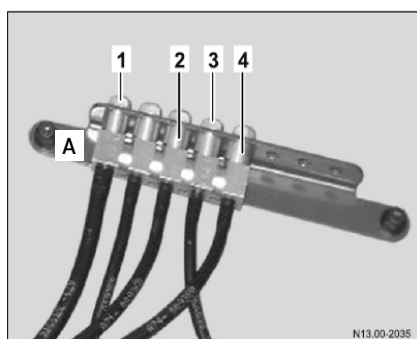
The compressed air distributor in the cab is located under the driver's seat.

The compressed air distribution strip on the chassis is located in the area of the EAP-U (compressed-air drier). Depending on the equipment, the EAP-U is located on the left of the frame or in the area of the first crossmember after the transmission.

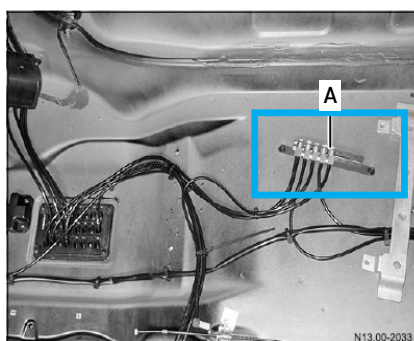
The compressed air distributors are made from multiple, individual segments.

At least one free slot is available for the body manufacturer.

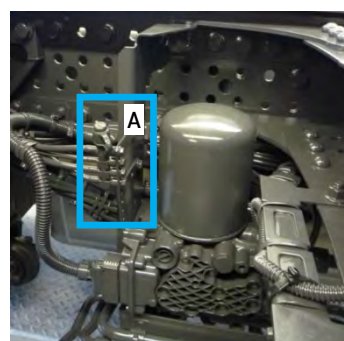
The maximum available pressure on the compressed air distribution strips is 8.5 bar (output 24 EAP-U).



Connection strip (A)



Example: connection strip (A) cab with offset floor



Connection strip(A) next to EAP-U

- ① Start piece;
- ② Connector A645 990 0378 (4-mm tube connection)
- ③ Mounting screw M6x10-8.8, N910105006007(tightening torque: 7.4 Nm ±1.4 Nm);
- ④ End piece

Electrical body interfaces

Actros 5 / Arocs 5 (963.x/964.x)

The relevant electrical interfaces for body manufacturers are located on the ASAM (Advanced Sensor and Actuator Module) control unit in the electrical compartment in front of the front passenger seat.

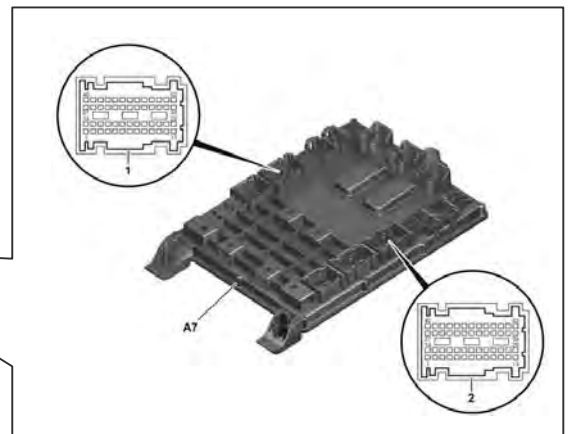
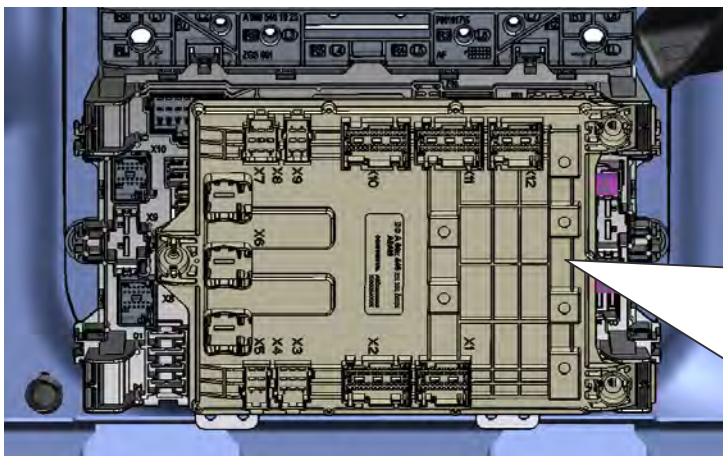
The body manufacturer interfaces are designed for picking up the most important electrical signals for adaptation of a body and for actuating indicator lamps in the multimedia cockpit (J6B/J6C). The ASAM outputs have internal, electronic current limitation.

The diagrams below show the installation location and assignment of the body interfaces.

Body signals on the ASAM control unit

Plug and pin	Function	Tap (A)
X2.52/4	Terminal 54 (brake light)	2
X2.52/8	Terminal 58 (standing lights)	2
X2.52/10	Turn signal light, left	1
X2.52/11	Turn signal light, right	1
X2.52/25	Function pin 2	0.7
X2.52/39	Function pin 1	0.7
X2.52/44	Function pin 3	0.7
X2.52/49	Function pin 4	0.7
X2.52/51	Engine speed or v signal	0.05
X2.52/52	Reversing lamp	2
X11.52/2	Input for virtual indicator lamp 1 ¹⁾	0.02 ¹⁾
X11.52/4	Input for virtual indicator lamp 3 ¹⁾	0.02 ¹⁾
X11.52/17	Input for virtual indicator lamp 2 ¹⁾ /	0.02 ¹⁾
X11.52/22	Input for virtual indicator lamp 5 ¹⁾	0.01 ¹⁾
X11.52/24	Input for virtual indicator lamp 4 ¹⁾	0.01 ¹⁾
X12.40/32	Virtual switch output	0.7

1) Input, no tap but permissible input current



Position of plugs X2.52 (1) and X11.52 (2) on the ASAM (A7) in the electrical compartment in front of the front passenger seat

Function pins, virtual switches and indicator lamps in the ASAM

The ASAM (Advanced Signal Actuator Module) control unit provides up to four function pins for implementing electrical functions in accordance with customer requirements. CAN-capable retrofit switches, parameterizable virtual switches in the multimedia cockpit (J6B/J6C) and various CAN signals (e.g. parking brake active, fuel reserve, power take-off status, etc.) can be used for this purpose. The switching conditions for the function pins can be changed individually using the Mercedes-Benz XENTRY vehicle diagnosis system. The load on the function pins must not exceed 0.7 A.

Depending on the vehicle equipment, up to five virtual, body-specific indicator lamps (tell-tales) and up to ten virtual body manufacturer pop-ups (warning messages) can be displayed on the primary screen in the multimedia cockpit.

The virtual indicator lamps are actuated via function inputs on the ASAM or via the body CAN of the XMC (code E3W).

The body manufacturer pop-ups with text are actuated via the body CAN in the XMC (code E3W). A fixed CAN identifier is assigned to each pop-up and each text.

On the secondary display and depending on the equipment, up to ten virtual body switches can be implemented as pushbutton switches or locking pushbutton switches. The virtual switches can be assigned various different symbols.

The function pins, virtual indicator lamps and body manufacturer pop-ups must be activated with the Mercedes-Benz XENTRY vehicle diagnosis system and parameterized according to the desired functionality.

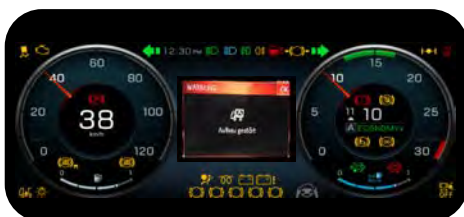


Primary display



Secondary display

Diagram: configurable, virtual indicator lamps and switches in the multimedia cockpit

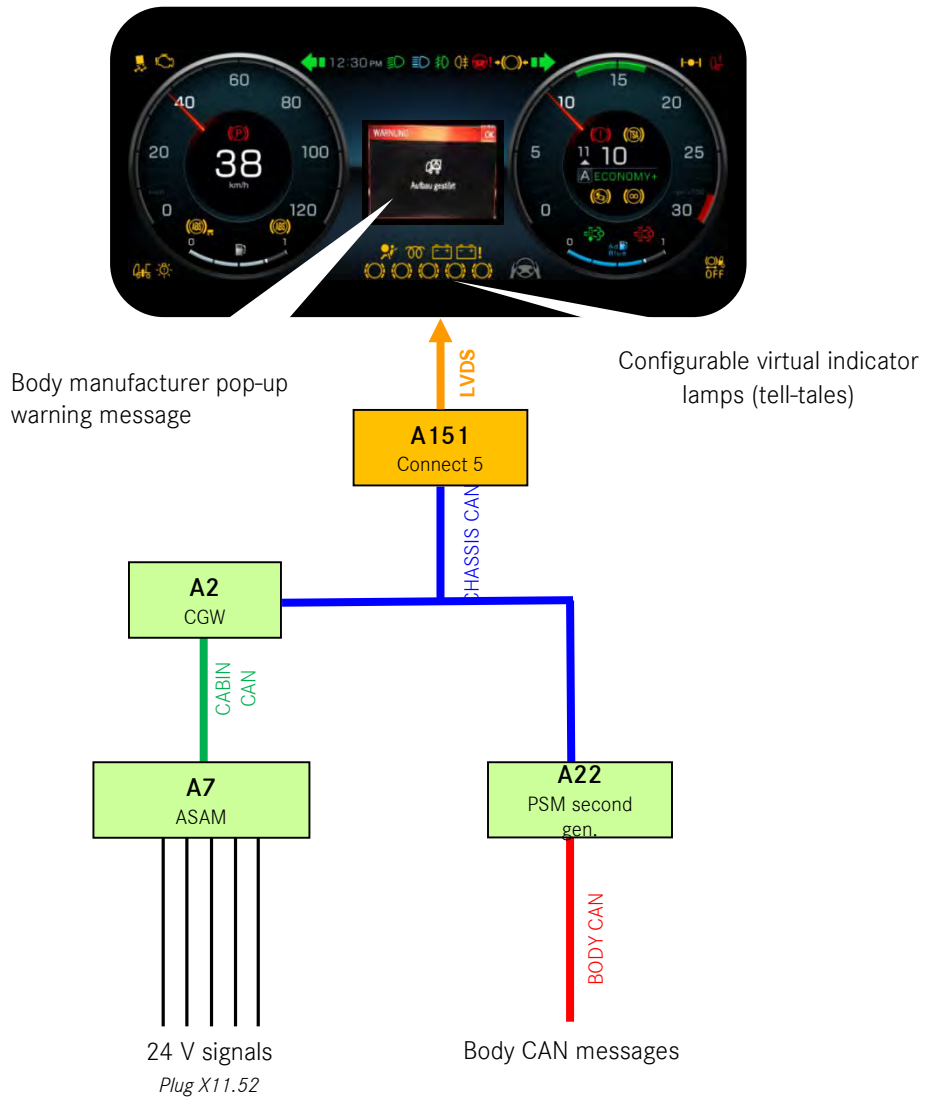


Example: structure of pop-up with text

Depending on the vehicle equipment (e.g. "Pre-installation, cargo liftgate controller"), function pins and virtual switches are pre-assigned ex works and so are not available for other functions.

Function pins, virtual switches and indicator lamps in the ASAM

Diagram: actuation of virtual indicator lamps and body warning messages



The assignment of warning messages / indicator lamps with function pin or CAN message must be parameterized with the Mercedes-Benz XENTRY vehicle diagnosis system.

Interface, fleet management system (FMS)

The Mercedes-Benz Telematics connecting harness provides the possibility to safely install additional third party telematics.

The standardized interface is an electronic communication connection for fleet management systems from various different manufacturers. Via the FMS interface, vehicle-internal CAN data can be converted to standardized **SAE J1939 format** and transferred to the relevant fleet management system.

The data content of the interface is defined in detail and agreed upon among the manufacturers. This means that various different fleet management systems can analyze the recorded vehicle data from the named manufacturers easily and for all brands. The electrical interface (X167) is located in a DIN installation opening above the driver's seat.

Depending on the vehicle version, the following data can be called up via the FMS interface in accordance with the **FMS 3.0 standard**:

- Brake light switches, outside temperature
- Vehicle speed / wheel speed
- Cruise control, clutch, power take-off status, accelerator pedal position
- Engine percent load to maximum torque at current vehicle speed
- Fuel consumption: total consumption / present consumption
- Total engine operating hours, total vehicle mileage
- Fuel tank fill level, engine speed, engine coolant temperature
- Individual axle loads of towing vehicle and total vehicle weight

Connections

In addition to the plug connections required for the MB Telematics hardware, the connecting harness also contains an additional green 12 pin FMS plug. This plug is for connection of third party equipment.



Connector Housing

MB Part Number – A0535451228

Flat Terminal – 0.5-1.0mm²

MB Part Number – A0355452428

Flat Terminal – 1.0-2.5mm²

MB Part Number – A0355452528

E3W – Second-generation PSM

The second-generation PSM (parameterizable special module) can be ordered for all vehicles of the **Actros 5 and Arocs 5 (Bm963/964)** model series.

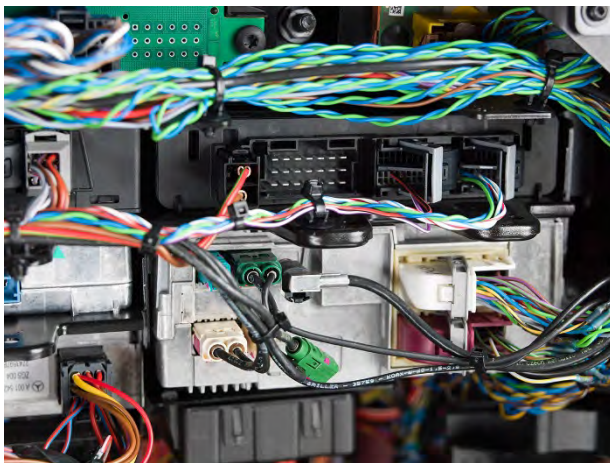
The new parameterizable special module is an SAM with additional function (XMC) and acts as an interface between the vehicle and body.

The second-generation PSM supports the following functions:

- Inputs for engine speed controller, engine start/stop, speed limiter
- Remote clutch control
- Comfort frequent stop brake actuation and status
- Body CAN interface to ISO 11898 (5 V; 250 kbaud)
- Trailer CAN interface to ISO 11992 (24 V; 125 kbaud)
- Two inputs for feedback on switched load (display as light in virtual switch)

In the new vehicle generation, power take-off controllers are implemented via the ASAM (Advanced Signal and Actuator Module).

An introduction into service manual for body manufacturers with detailed information on the PSM/XMC and technical information on the body and trailer CAN can be found on the Bodybuilder Portal on the tab "Information" ⇨ "Engineering and information" ⇨ "Choose Model Range" ⇨ "Electrics and electronics".



Installation location of the second-generation PSM in the electrical compartment in front of the front passenger seat

The new parameterizable special module is an SAM with additional function and is therefore also referred to as the control unit XMC.

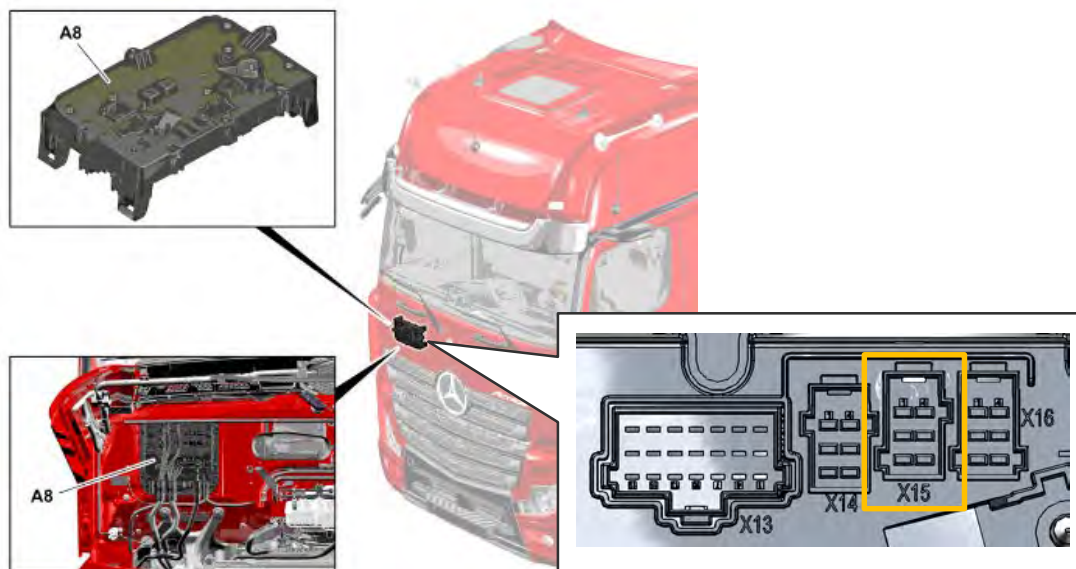
Voltage tap and ground

Actros 5, Arocs 5 (963/964)

To connect retrofitted electrical consumers (with a current consumption of up to 10 A) in the cab, plug X15 is provided on the power distribution module cabin. Plug X15 is located on the CC interface behind the front-end flap.

Body plug X15 on the PDM control unit

Plug and pin	Function	Max. tap (A)
X15.6/1	Terminal 31 (- 24 V)	
X15.6/2	Terminal 15 (+ 24 V)	5
X15.6/3	D+	5
X15.6/4	Terminal 31 (- 24 V)	
X15.6/5	Free	
X15.6/6	Terminal 30 (+ 24 V)	10



Installation location of plug X15 in the PDM cabin (A8): behind front-end flap (diagram shows left-hand-drive vehicle)

The current consumption of all electrical consumers connected to plug X15 must not exceed 10 A.



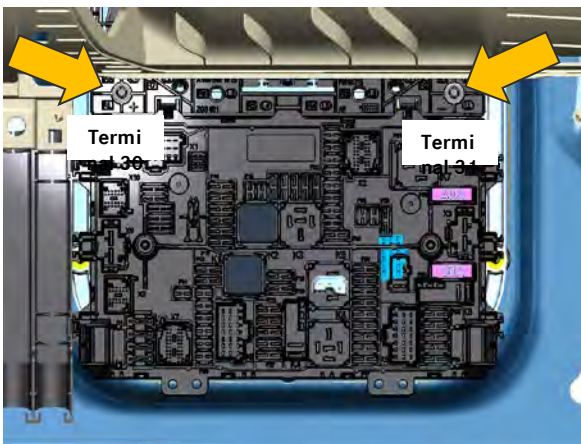
E9G – Pre-installation for electrical equipment

The equipment can be ordered for selected chassis of the **Actros 5 and Arocs 5 (Bm 963/964)** model series.

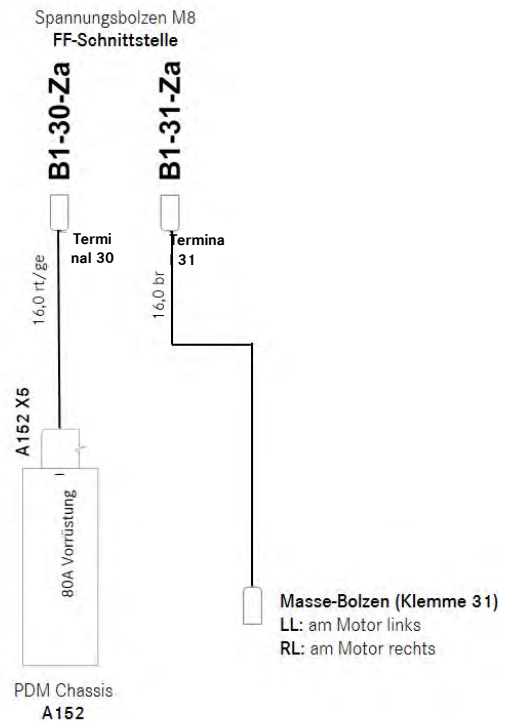
The pre-installation for electrical equipment comprises tension bolts for terminals 30 (+) and 31 (-) in the cab and for the power supply of additional 24 V consumers with a current consumption of up to 80 A. The pre-installation is suitable for retrofitting additional electrical consumers with current consumption > 10 A in the cab.

The scope of equipment supply includes the following:

- Electrical fuse (80 A) at connection X5 of the PDM chassis (power distributor Plus)
- Tension bolt M8 for terminals 30 and 31 on the carrier for the CC interface (inside) above the PDM cabin
- Electrical lines (cross-section: 16 mm²) between the power distributors on the chassis and tension bolts on the CC interface



Left-hand-drive vehicles: tension bolt M8 on the CC supporting frame (inside), above the PDM cabin control unit



Excerpt from circuit diagram PE54.21-W-2164F

Further information on equipment E9G can be found in Chapter 8 "Electrics/electronics" in Book II of the current Mercedes-Benz body/equipment mounting directive for the Actros 5 and Arocs 5 model series.

Voltage tap and ground

Actros 5 and Arocs 5 (963/964)

To connect additional electrical consumers on the chassis, connections X11 and X12 are provided on the PDM chassis (power distributor Plus).

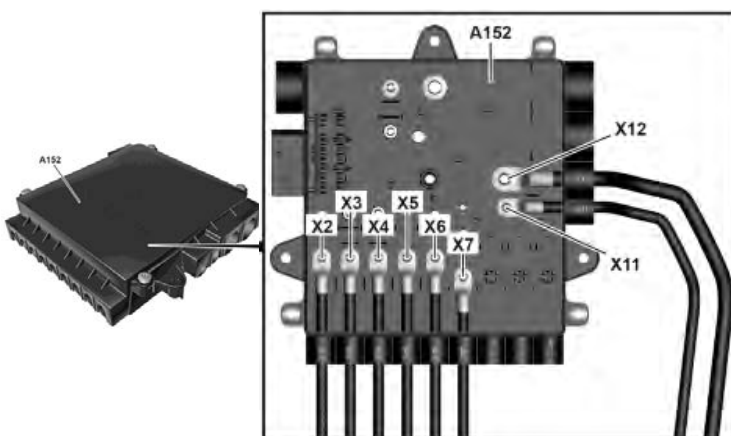
Depending on the vehicle and equipment, the PDM chassis is installed at various different locations on the vehicle.

Electrical consumers with a maximum current consumption of 40 A can be connected to interface X11 and electrical consumers with a maximum current consumption of 200 A can be connected to interface X12 (max. 250 A for 60 seconds).

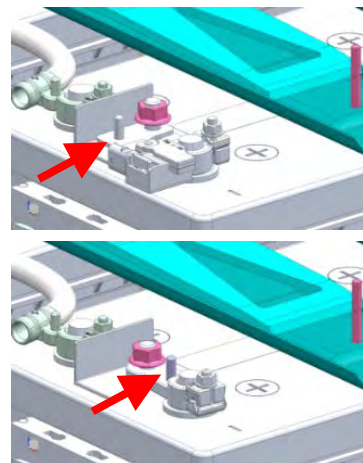
Interface X11 is designed for fuses of type SF30 and interface X12 is designed for fuses of type SF51.

Note: The current consumption of all electrical consumers connected to X11 and X12 must not exceed a total of 200 A (250 A for 60 seconds).

The ground return conductor for the electrical consumers must be routed via the 6-mm additional threaded pin on the negative battery clamp. In vehicles with a central ground box, the electrical consumers must be connected to the ground box.



Connections X11 and X12 on the PDM chassis (A152)
(power distributor Plus)



Threaded pin M6 for the body manufacturer
ground tap (with and without battery sensor)

The ground return conductor for the electrical consumers must be routed via the 6-mm additional threaded pin on the negative battery clamp. In vehicles with a central ground box, the electrical consumers must be connected to the ground box.

Battery Isolation Switches (including E5G, E9D)

It is sometimes required that a battery isolation switch be fitted to a vehicle, often when the vehicle is to be used in dangerous goods transportation applications.

It is highly recommended the factory-available BESO isolation switch (**E5G**) is selected and installed at the factory. In basic terms, the BESO isolation switch, before disconnecting the batteries, alerts the control units of the vehicle via CAN communication that the batteries will be disconnected, allowing them to save their current status. Approximately 805ms after the disconnect/isolation switch is activated, the batteries are disconnected.

A mechanical battery disconnect switch can be installed on vehicles which are not equipped with an electronic battery disconnect switch (BESO). If a TCO is installed in the vehicle, this must still be supplied with power even if the power supply is disconnected. A 1A fuse is required for the TCO supply. On vehicles with preinstallation for twin-pole battery disconnect switch, sales code **E9D**, (Preinstallation for bipolar battery disconnect switch), this line is already installed in the vehicle. Check Body/Equipment Mounting Directives for further information, and wiring diagram PE54.10-W-2069F (available on the Mercedes-Benz Bodybuilder Portal).

The battery disconnect switch must be installed near the batteries and effectively protected from moisture, splash water and the influence of foreign objects.

Optionally, the battery disconnect switch with part number A 000 545 55 08 can be used.

The following should be observed when using a different switch:

- Switching current: 1500 A, at least 250 A
- Main circuit: Two M10 connections
- Effective de-bouncing during switch-on and switch-off

Important Note:

Whether fitted with BESO (E5G) or Preinstallation for Isolation Switch (E9D), or an alternative solution, after switching off the ignition and before actuating the disconnect switch, the user must wait for a certain period of time to elapse. This will ensure:

1. For vehicles without BESO, fault-free shutoff (sleep mode) of all control units; and
2. Cooling of the AdBlue® injection valve in the exhaust gas aftertreatment unit.

Various time periods must be observed depending on the vehicle equipment and temperature of the exhaust gas aftertreatment unit. These must be described on a sign on the installed battery disconnect switch:

- Engine OM 936: Run-on time: ≥ 5 minutes
- Engine OM 47x: Run-on period: ≥ 45 minutes

E5A, E5B, E5C – Switch nos. 1–3, for body electrical system

Pre-installation for connecting an electrical consumer with an operating voltage of 24 V and a current consumption of 15 A – 20A in/on the cab or body.

The fused electrical lines for the 24 V connecting point are routed from the load switch on the instrument panel to the CC interface on plugs X81.15 and X82.40 behind the front-end flap.

The switch is equipped with a function indicator lamp (LED), which tells the driver whether or not the connected consumer is functional.

Position of the E5A electrical connections on the CC interface, 24V/15A

- X81.1: 24 V + (terminal 30; RD/VT)
- X81.13: 24 V - (terminal 31; BN)
- X82.14: function feedback (BN/YE)

Position of the E5B electrical connections on the CC interface, 24V/20A*

- X81.2: 24 V + (terminal 30; RD/GY)
- X81.14: 24 V - (terminal 31; BN)
- X82.15: function feedback (BN/GN)

Position of the E5C electrical connections on the CC interface, 24V/20A*

- X81.3: 24 V + (terminal 30; RD/BN)
- X81.15: 24 V - (terminal 31; BN)
- X82.16: function feedback (BN/WH)

* E5B and E5C share a common 20A fuse, and therefore the total current draw between the two switches cannot exceed 20A.



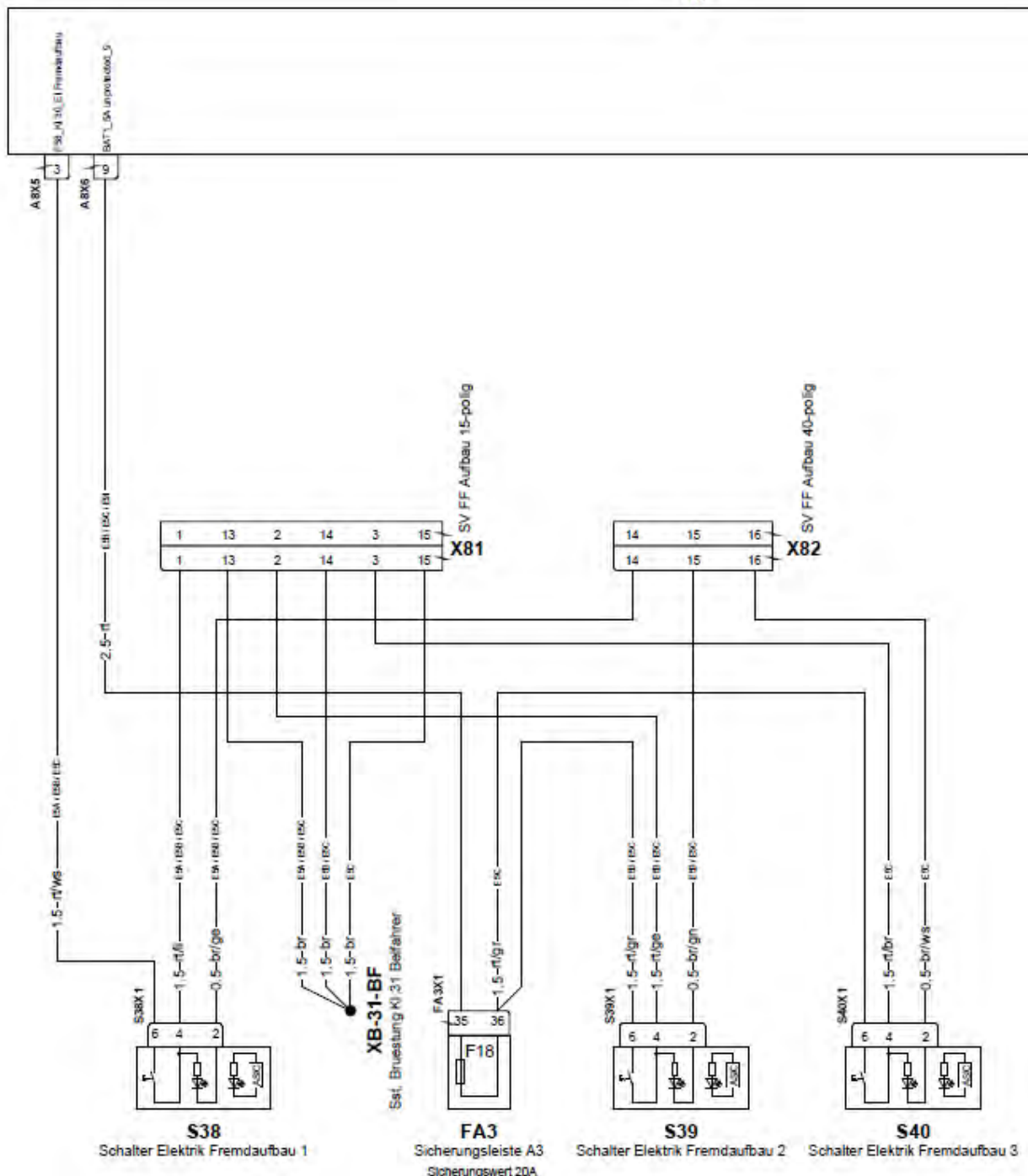
Switches 1 - 3

E5A-E5C - Switch nos. 1-3, for third-party body electrical system

Circuit diagram for Actros 5 and Arocs 5 (Bm963.x/964.x)

PE54.18-W-2200F

PDM Cabin
A8



J9P – Pre-installation and display for up to four cameras

The equipment can be ordered for selected vehicles of the **Actros 5 and Arocs 5 (Bm 963/964)** model series.

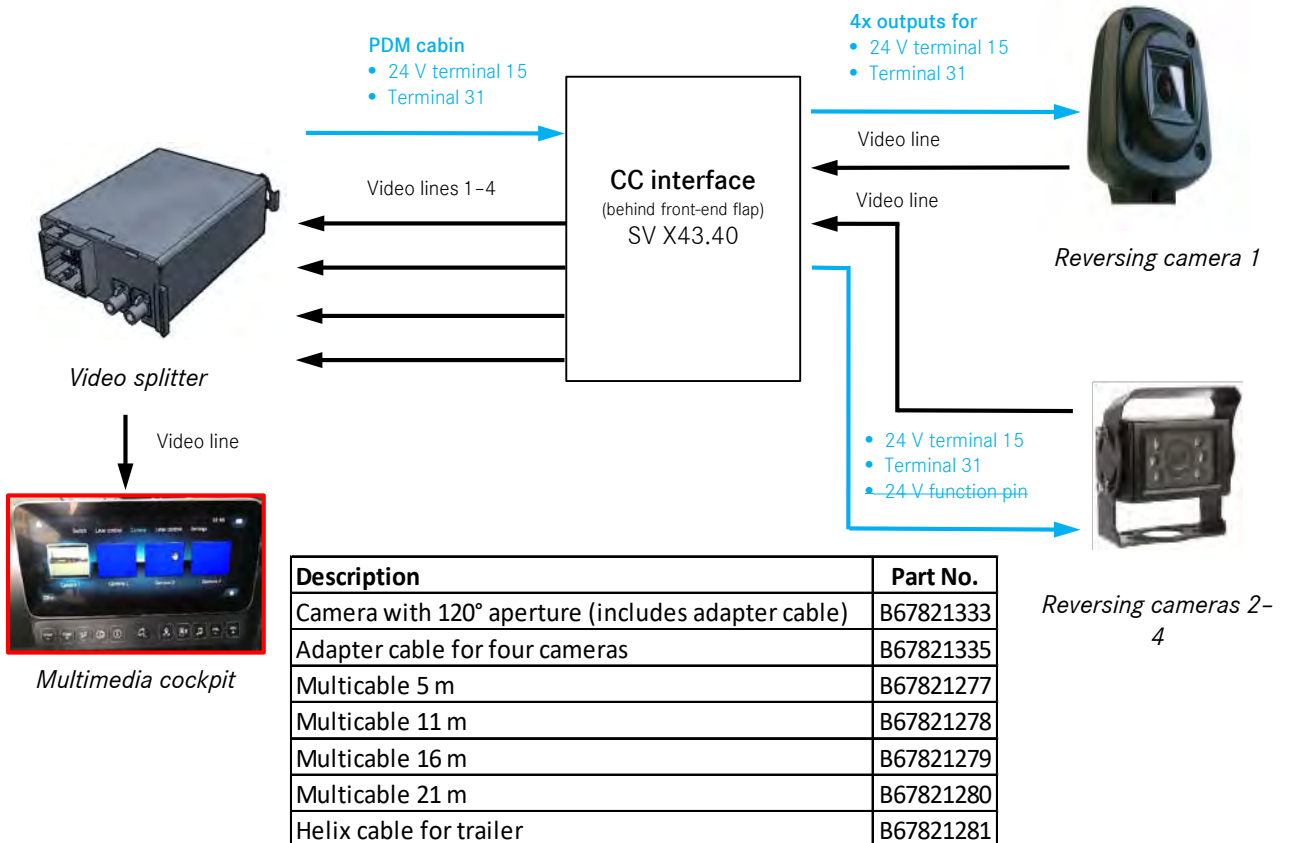
The pre-installation for up to four reversing camera systems can be ordered for vehicles with the multimedia cockpit (J6B/J6C) and essentially comprises a video splitter for up to four camera systems with PAL or NTSC video format, video lines and a 24 V power supply for each camera on the CC interface.

The image can be displayed as a whole or in split format on the multi-touchscreen (secondary display) .

When reverse gear is engaged, camera 1 is automatically activated.

Pre-installation J9P includes the following:

- Forced control of the multimedia cockpit (code J6B/J6C)
- Video splitter in the electrical compartment
- Video lines for up to four camera systems, routed from the video splitter to plug X43.40 on the CC interface
- 24 V power supply for the camera systems on plug X43.40 on the CC interface



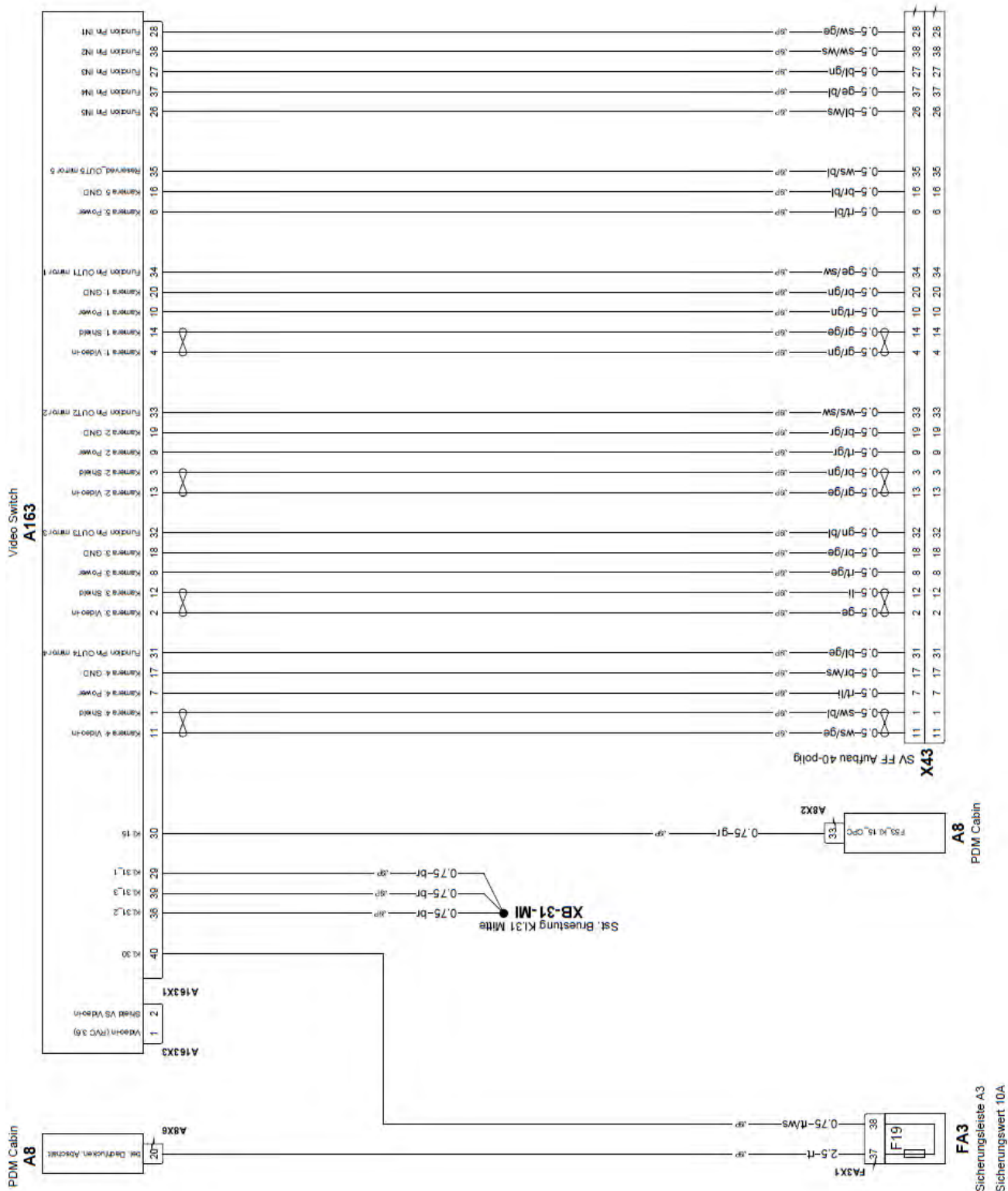
Further information on equipment J9P can be found in Chapter 8 "Electrics/electronics" in Book II of the current Mercedes-Benz body/equipment mounting directive for the Actros 5 and Arocs 5 model series.



J9P - Pre-installation and display for up to four cameras

Circuit diagram for Actros 5 and Arocs 5 (Bm963.x/964.x)

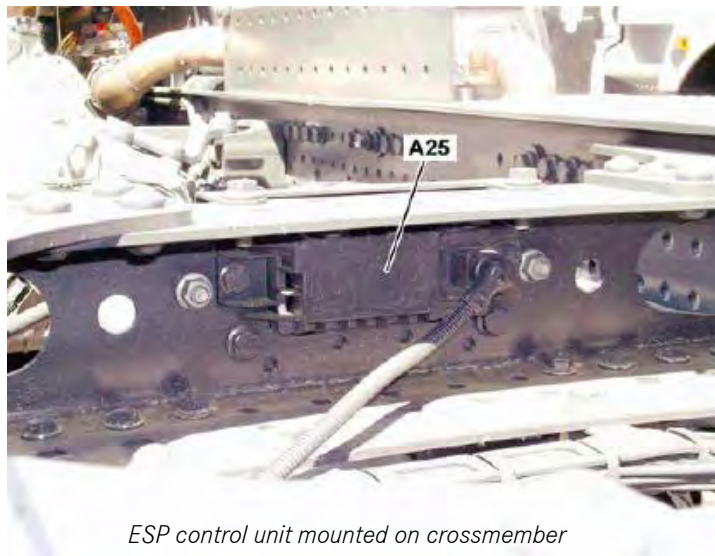
PE54.65-W-2102F



Electronic Braking System (EBS) and Electronic Stability Control (ESP)

Mercedes-Benz Trucks use Electronic Brake Systems, and in many cases Electronic Stability Control Assist (ESP). Where ESP is fitted, the Body/Equipment Mounting Directives must be observed. At a minimum, parameter changes will be required by a trained and authorised person to take into account a chassis modification such as a revised wheelbase, and the centre of gravity height once a body has been fitted.

Note: Care must be taken when working around the ESP sensor/control unit to avoid damage or incorrect operation. If using impact tools or processes, the sensor must be unbolted from the crossmember and mechanically isolated. When replacing the sensor, the locating pin must be correctly positioned to ensure the control unit is not damaged.



ESP control unit mounted on crossmember

Further information can be found in Chapter "Stability Control Assist, ESP®" in Book II of the current Mercedes-Benz body/equipment mounting directive for the Actros 5 and Arocs 5 model series.

L9A – Pre-installation, rotating beacons

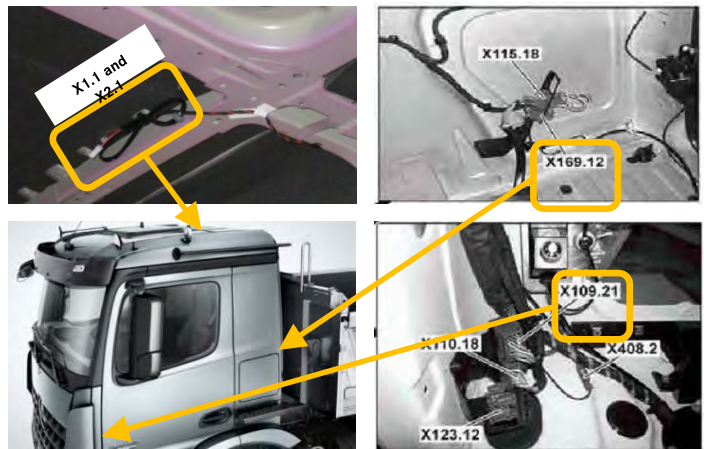
The equipment can be ordered for selected vehicles of the **Actros 5 and Arocs 5 (Bm 963/964)** model series.

The pre-installation enables the subsequent connection of up to two rotating beacons. It includes the entire wiring and the associated switch on the instrument panel.

The subharness with plugs X1.1 and X2.1 is routed up to the roof paneling next to the roof hatch above the driver's seat and fused with 10 A.



Installation location of electrical connector **X1.1** in the area above the driver's seat (S, M and L cab)



Installation locations of the electrical connectors for rotating beacons

Note: Rotating beacons installed in combination with the outside-mirror camera system (code F6T) may, depending on the design, impair its function.

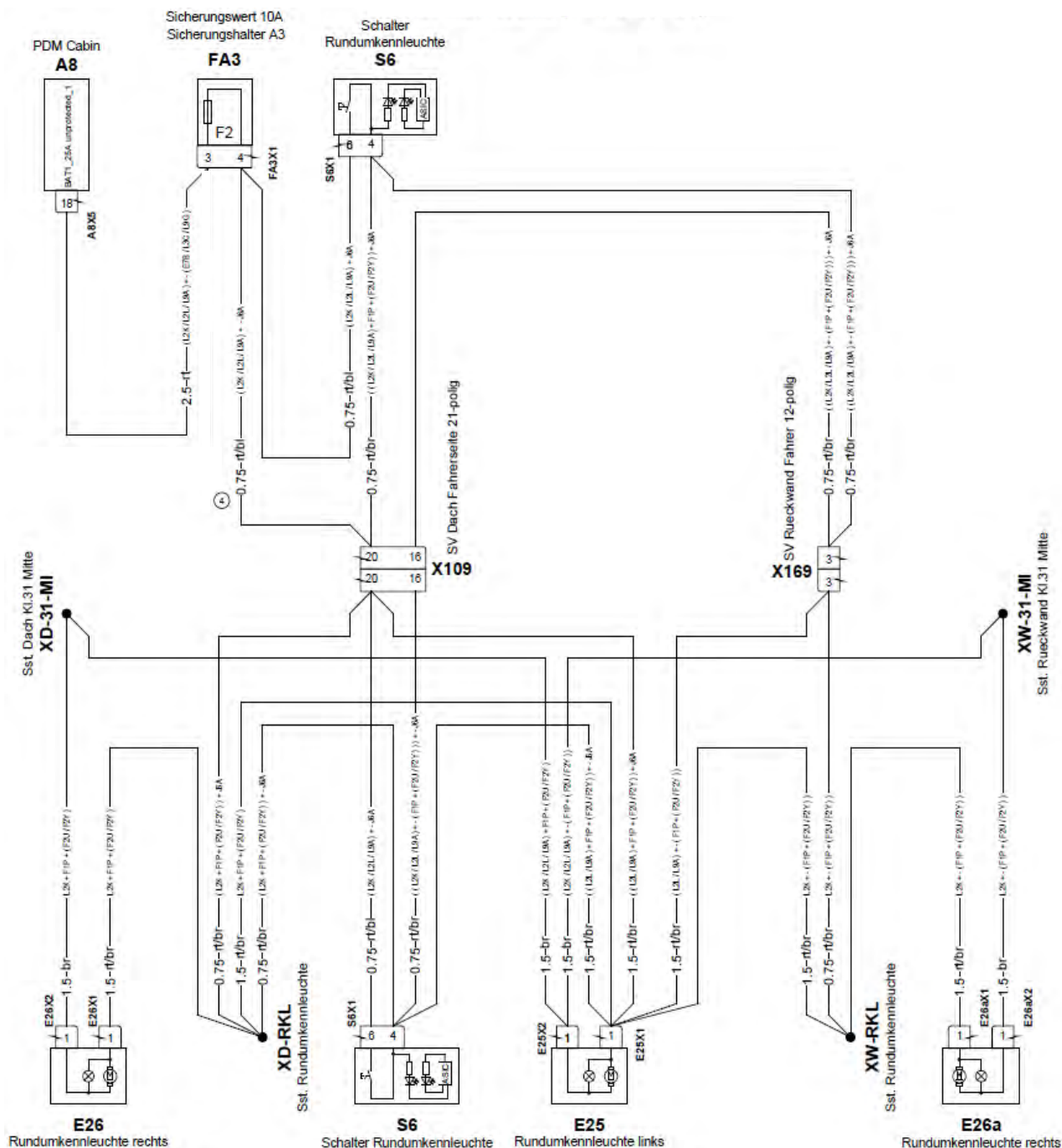
The retrofitting of rotating beacons in combination with the outside-mirror camera system is possible only if certain technical prerequisites are fulfilled. If rotating beacons are not retrofitted properly, this can impair the function of the outside-mirror camera system. Further information can be found in Chapter 8.5.2 "Pre-installation for lamp mounting" in Book II of the Mercedes-Benz body/equipment mounting directive for Actros 5 and Arocs 5.

The installation location of the connectors for the rotating beacons varies depending on the cab and roof variant. Rotating beacons can be mounted on the roof to the left and right of the roof hatch (i.e. the standard installation locations) with rivet nuts M5x12 as per MBN13024-A (item number: N913024005103). Other installation locations must be clarified beforehand with the development department responsible.

L9A - Pre-installation, rotating beacons

Circuit diagram for Actros 5 and Arocs 5 (Bm963.x/964.x)

PE82.10-W-2000FE



L9C – Pre-installation for additional headlamps; roof

The equipment can be ordered for selected vehicles of the **Actros 5 and Arocs 5 (Bm 963/964)** model series.

Pre-installation L9C enables the retrofitting of up to four additional high-beam headlamps on the cab roof. Standing lights and high-beam headlamps can be connected.

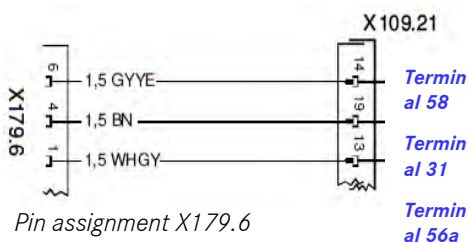
Connector X179.6 in the pre-installation is routed on the roof paneling in the area of the interior lamp on the front passenger side.

The current-carrying capacity of the standing lights is max. 5 A, while the current-carrying capacity of the high-beam headlamps is max. 15 A.

To connect additional headlamps on the front of the vehicle, connector X109.21 in the driver footwell can be disconnected and used (included in the scope of code L9C).



Example: additional headlamp attachment



Excerpt from circuit diagram PE82.10-W2000FD

Description	Part No.
Connector Housing	A0265459828
Flat Terminal – 0.5-1.0mm ₂	A0355452428
Flat Terminal – 1.0-2.5mm ₂	A0355452528

The total current consumption of all connected headlamps (standing lights and high-beam headlamps) must not exceed 15 A. With this circuit, the two standard front high-beam headlamps remain fully operational. When mounting/activating the headlamps, observe the relevant, country-specific legislation.

L9G – Pre-installation for work lamps, cab rear panel

The equipment can be ordered for selected vehicles of the **Actros 5 and Arocs 5 (Bm 963/964)** model series.

The pre-installation includes a switch on the instrument panel, a power supply up to the switch and switch relay and the electrical wiring harness from the switch relay to interface X200.6 on the cab rear panel (interior) in the area behind the driver's seat.

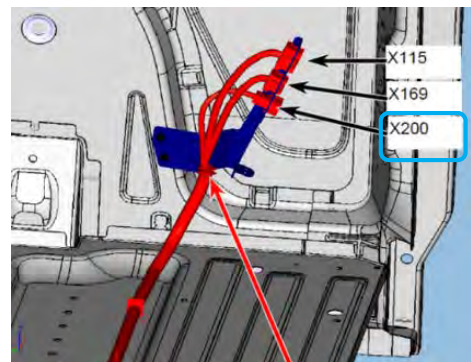
This means that the work lamp can be positioned as required on the cab rear panel and connected quickly and easily.

If the vehicle is additionally equipped ex works with not only pre-installation L9G but also the work lamp (code L3A or code L3C), only one switch is installed for both equipment packages.

The total current consumption for L9G alone or together with L3A/L3C is max. 10 A (common fuse with 10 A for L9G + L3A/L3C).



Work lamp switch on the instrument panel



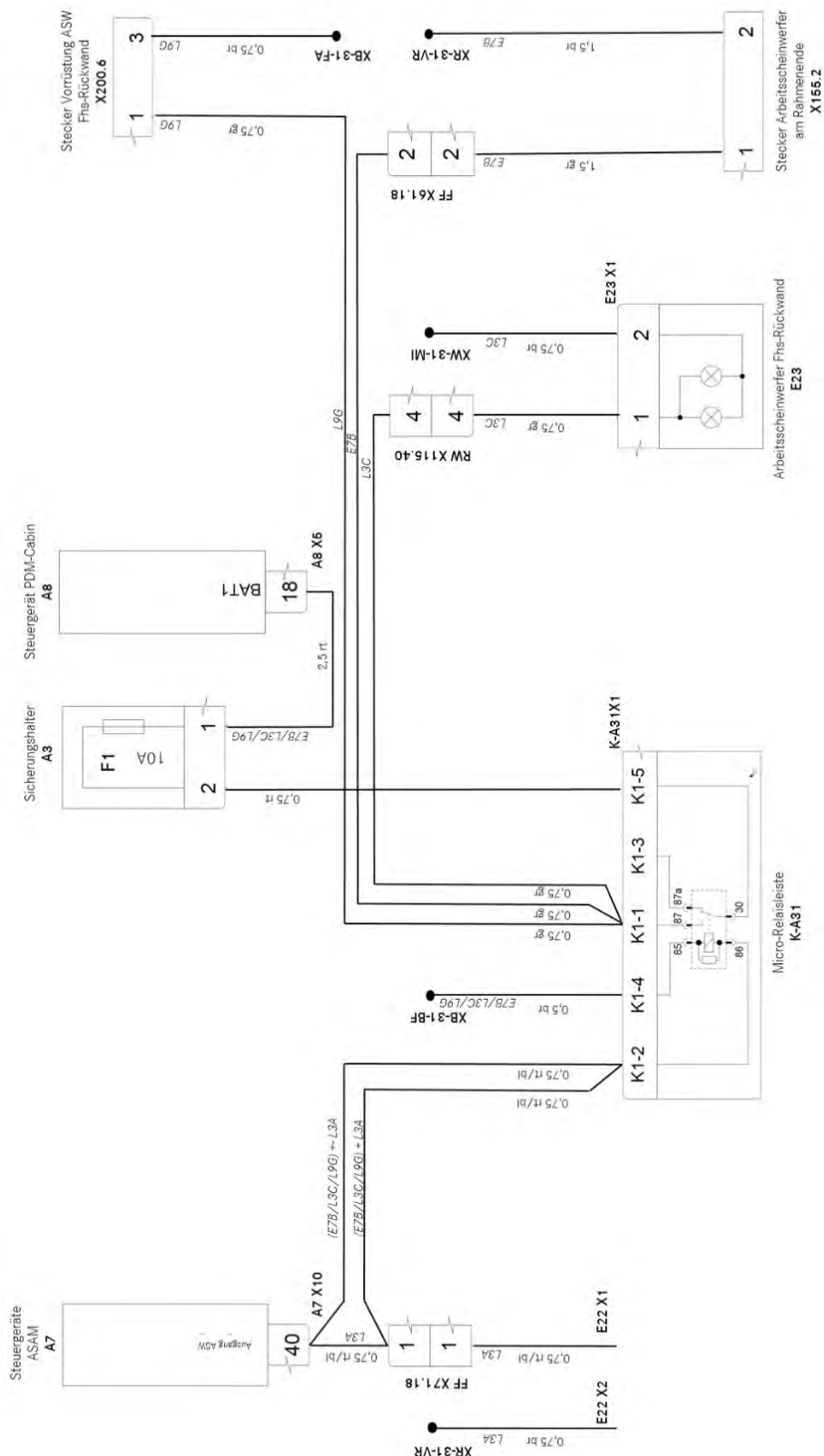
Installation location of plug X200.6 for the work lamp

Headlamps and fastening points on the cab rear panel are not included in the scope of supply.
Headlamp L3A is equipped ex works with one bulb (H3 24 V / 70 W), while headlamp L3C is equipped with two bulbs (H3 24 V / 70 W).

L9G - Pre-installation for work lamp, cab rear panel

Circuit diagram for Actros 5 and Arocs 5 (Bm 963/964)

PE82.10-W-2000FD



Power Take Off

Many factory power take off options are available. The following information represents the most popular PTO's in the Australian market. Information on other PTO's is available on the Bodybuilder Portal, and refer to the Power Take Off section of the Body/Equipment Mounting Directives, and Power Take Off area of the Bodybuilder Portal for further information.

N2E

The PTO MB 131-2c is gearbox-dependent and shiftable. It is available for tippers, concrete mixers, rigids and tractors. The PTO is mounted on the gearbox countershaft and driven by this shaft via a spur-gear drive. A DIN 5462, A8 x 32 x 36 hydraulic pump (MPA) can be directly flange-mounted on the PTO.



N1Q

The PTO NA 124-10c with DIN 5462, A8x32x36 pump attachment (MPA) for low and medium speeds is gearbox-dependent and shiftable. The hydraulic pump is directly flanged on and is driven by the gearbox countershaft via a 2-shaft spur-gear drive.



N7M

The rear engine PTO with hydraulic pump connection ISO7653D is not selectable, i.e. it turns as soon as the engine runs. It is driven via the timing gears of the camshaft. The maximum torque is 550 Nm.





Power Take Off

Code	Transmission	PTO Description	Rotation	I-1-1	i-1-2 P-1 1000	P-1 max Md1 max	n max
N2E	G280-16 (G2D)	NA131-2c	Anti-clockwise	1.07	1.29 45	76 400	1700
	G281-12 (G2E)		Anti-clockwise	1.04	1.33 44	74 400	1700
	G330-12 (G2F)		Anti-clockwise	1.07	1.38 45	76 400	1700
	G230-12 (G2C)		Anti-clockwise	1.07	1.37 45	76 400	1700
	G211-12 (G2B)		Anti-clockwise	1.04	1.33 44	74 400	1700
N1Q	G280-16 (G2D)	NA124-10c	Anti-clockwise	1.35	1.62 92	156 650	1700
	G281-12 (G2E)		Anti-clockwise	1.05	1.35 72	122 650	1700
	G330-12 (G2F)		Anti-clockwise	1.35	1.74 92	156 650	1700

Code	Engine	PTO Description	Rotation	I-1-1	Md1 max
N7M	OM471/473	ISO 500Nm	Anti-clockwise	1.22	550
N7M	OM470	ISO 500Nm	Anti-clockwise	1.30	550
N7M	OM936	ISO 500Nm	Clockwise	1.07	550

(1st) Main PTO
i-1-1 Low-range ratio
i-1-2 High-range ratio
Md-1 max max. torque in Nm obtainable at PTO in continuous operation
P-1 1000 / P-2 1000 output at PTO in KW at 1000 1/min engine speed 1*
P-1 max / P-2 max max. output at PTO in KW at 1700 max. engine speed 1*
Direction of rotation Sense of rotation viewed in driving direction
n max.. Maximum engine speed 2*

1* in low-speed gear group
2* Speed at PTO must be calculated

N6P – Pre-installation for power take-off, via externally installed transfer case

The equipment is expected to be available from production month December 2019 for selected 6x4 and 8x4 vehicles of the **Actros 5 and Arocs 5 (Bm 963/964)** model series.

The pre-installation is required on vehicles with PowerShift transmission so that an external transfer case / intermediate transmission for body applications (e.g. concrete pumps, drills, suction purgers) can be functionally integrated in the vehicle.

The following functions can be implemented with equipment N6P:

- External clutch operation
- External engine start (e.g. via remote control, when the clutch and gear are engaged)
- Gear request required for the application at standstill (e.g. direct drive)
- Easy shifting of the KITAS sensor by the body manufacturer

The scope of supply also includes the following:

- Power take-off switch on the instrument panel in the cab
- A second rpm sensor as included ancillary part in the cab for retrofitting by the body manufacturer
- A prepared and temporarily attached wiring harness for connection of the second rpm sensor by the body manufacturer
- Preparatory parameterization in the relevant control units

Note:

Equipment N6P essentially requires intervention in the automatic clutch and transmission controller, which is why particular care must be taken here when an external intermediate transmission is installed.

The specifications regarding the attachment of an external transfer case (e.g. weld joints, threaded connections, propeller shaft installation, etc.) as contained in the Mercedes-Benz Trucks body/equipment mounting directives must be observed at all times.



Example: power take-off via externally installed intermediate transmission

Further detailed information on installation and the electrical connection of a power take-off via an external transfer case can be requested by e-mail from the employees responsible in the MB Trucks overall vehicle development team (TP/EVE). Contact address: bb-engineering-trucks@daimler.com



Wheelbase Modifications

Many topics require consideration when planning a wheelbase modification. These include, but are not limited to:

- The allowable wheelbase range for the model type
- Frame strength and rigidity
- Electronic Stability Control (ESP)
- Steering/steer-ability
- Vehicle/Combination Stability
- Electrical (control unit and sensor location/mounting, wiring harness extension/routing)
- Pneumatics (airline extensions, compressed air take-offs)
- Propeller shafts
- Fasteners and tightening torques
- Pre-existing wheelbase modification on new vehicle

The guidance Body/Equipment Mounting Directives, in combination with any applicable state and federal regulations, must be considered.

For modifications or model types that do not fall within the scope of the Body/Equipment Mounting Directives, a Certificate of Non-Objection should be applied for. The application process for this (detailed in the Body/Equipment Mounting Directives) should be started prior to commitment to the customer.

Information and Copyright

Questions and suggestions

Please do not hesitate to contact us if you have any questions or suggestions regarding the following topics:

- Mercedes-Benz body/equipment mounting directive and certificates of non-objection regarding the Actros 5, Arocs 5 and Atego model series

Mercedes-Benz Trucks Australia

Email: mercedes_technical@daimler.com

Overall vehicle development body technology MB Trucks

Email: bb-engineering-trucks@daimler.com

- General technical and interpretation questions

Mercedes-Benz Trucks Australia Email:

mercedes_technical@daimler.com

- Content of the Mercedes-Benz Bodybuilder Portal

Bodybuilder Portal

Email: bb-portal@daimler.com

© Daimler Truck and Bus Australia Pacific Pty Ltd 2020 and Daimler Truck AG.

This document, including all its parts, is protected by copyright.

Any form of usage requires the prior written consent of Daimler AG..

This applies in particular to the reproduction, distribution, processing, translation, microfilming and storage and/or processing in electronic systems, including databases and online services.

- This printout is not subject to the update service.