



PP 86DSP PLUG & PLAY

8-Kanal Verstärker mit integriertem 9-Kanal DSP 8-Channel Amplifier with integrated 9-Channel DSP

Congratulations!

Dear Customer,

Congratulations on your purchase of this innovative and high-quality MATCH product.

With the PP 86DSP, MATCH is setting new standards in the evolving plug & play market. We wish you many hours of enjoyment with your new MATCH PP 86DSP.

Yours, AUDIOTEC FISCHER

General instructions

General installation instructions for MATCH components

To prevent damage to the unit and possible injury, read this manual carefully and follow all installation instructions. This product has been checked for proper function prior to shipping and is guaranteed against manufacturing defects.

Before starting your installation, disconnect the battery's negative terminal to prevent damage to the unit, fire and/or risk of injury. For a proper performance and to ensure full warranty coverage, we strongly recommend to get this product installed by an authorized MATCH dealer.

Install your PP 86DSP in a dry location with sufficient air circulation for proper cooling of the equipment. The amplifier should be secured to a solid mounting surface using proper mounting hardware. Before mounting, carefully examine the area around and behind the proposed installation location to ensure that there are no electrical cables or components, hydraulic brake lines or any part of the fuel tank located behind the mounting surface. Failure to do so may result in unpredictable damage to these components and possible costly repairs to the vehicle.

General instruction for connecting the PP 86DSP amplifier

The PP 86DSP amplifier may only be installed in motor vehicles which have a 12 Volts negative terminal connected to the chassis ground. Any other system could cause damage to the amplifier and the electrical system of the vehicle.

The positive cable from the battery for the entire sound system should be provided with a main fuse at a distance of max. 30 cm from the battery. The value of the fuse is calculated from the maximum total current draw of the car audio system.

Use only the enclosed MATCH cable for connection of the PP 86DSP. The use of other cables can result in damage of the amplifier, the head unit / car radio or the connected loudspeakers! The fuses of the amplifier may only be replaced by identically rated fuses (2 x 25 A) to avoid damage of the amplifier.

Prior to installation, plan the wire routing to avoid any possible damage to the wire harness. All cabling should be protected against possible crushing or pinching hazards. Also avoid routing cables close to potential noise sources such as electric motors, high power accessories and other vehicle harnesses.

Connectors and control units



(6)

(7)

Speaker Output E - H

Connector for the loudspeakers of the channels E to H. Alternatively you can directly connect a passive MATCH PP subwoofer.

Optical Input

1

2

3)

4

Optical input for digital stereo signals (SPDIF format).

Mono Line Output

Mono line outputs for connecting external amplifiers. Make sure that the remote output is used to turn on these devices.

Clipping LED

This LED lights up red if one of the analog

inputs is overdriven.

5 Input Sensitivity

Control for adjusting the input sensitivity.

Highlevel Input E + F

Highlevel speaker input of the channels E and F.

System Connector

Connector for the MATCH cable harness. Make sure that you only use the original cable that comes with the amplifier to connect the PP 86DSP with your car radio.



(1) Speaker Output E - H

This output is used for connecting a passive Plug & Play subwoofer like the MATCH PP 10E-D or further loudspeakers. When connecting a Plug & Play subwoofer, four amplifier channels of the PP 86DSP are used for driving the subwoofer. Please make sure that in this case the output signal of all these four channels is identical. Alternatively you can configure each channel individually for other purposes via the DSP PC-Tool software (e.g. center speaker or fully active configurations). The impedance per channel must not be lower than 2 Ohms.

Attention: Solely use the connection cable with the 8-pole connector and flying leads which is included in delivery!

② Optical Input

Optical input in SPDIF format for connecting signal sources with a digital audio output. The sampling rate of this input must be between 12 and 96 kHz. The input signal is automatically adapted to the internal sample rate. In order to activate and control the volume of this input, we recommend to use an optional remote control.

Notice: This amplifier can only handle stereo input signals and no Dolby-coded digital audio stream.

③ Mono Line Output

The *Mono Line Outputs* are floating-ground lowlevel outputs (max. 3 Vrms) for connecting additional power amplifiers. A specially designed "Balanced Audio Transformer" avoids any ground-loops that may cause undesired alternator noise. Please make sure that you always turn on/off external amplifiers using the remote output (*Remote Out*) of the PP 86DSP. Additionally this output will be turned off when the "Power Save Mode" of the amplifier is active as well as during software updates.

Important: Both RCA outputs deliver the same audio signal. This can be configured independently of the other amplifier channels with the DSP PC-Tool software!

(4) Clipping LED

This LED lights up red if one of the six highlevel inputs is overdriven. The LED has no function when an input signal is applied to the digital input (*Optical Input*) or to the MEC module. If this LED lights up

reduce the input sensitivity by using the control 5 (*Input Sensitivity*) until the LED goes out.

(5) Input Sensitivity

This control is used to adapt the input sensitivity of the highlevel inputs to the output voltage of the connected signal source. This is not a volume control, it's only for adjusting the amplifiers gain. The control range of the highlevel input goes from 11 Volts (max. CCW position) to 5 Volts (max. CW position). **Please note:** The input sensitivity ex works is set to 11 Volts (max. CCW position). If the highlevel input of the *System Connector* or the *Highlevel Input* E + F are used in combination with a standard car radio we recommend an input sensitivity of roughly 9 Volts. For this purpose, turn the control from max. CCW position to 9 o'clock position.

6 Highlevel Input E + F

2-channel highlevel loudspeaker input of the channels E and F to connect the amplifier directly to loudspeaker outputs of OEM / aftermarket radios or OEM amplifiers. Input sensitivity is factory-set to 11 Volts for all channels. It is possible to vary the sensitivity between 5 and 11 Volts with control 5 (*Input Sensitivity*).

Please note: This input has to be used for car radios with 6-channel highlevel output because the MATCH connection cable only provides four highlevel channels.

Attention: Solely use the connection cable with the 4-pole connector and flying leads which is included in delivery!

(7) System Connector

Please use this terminal only in combination with the cable harness that is included in the delivery of the amplifier. Never ever use any other harnesses to connect the MATCH PP 86DSP to your head unit / car radio.

Caution: The use of other harnesses than the one that is supplied with the amplifier may cause severe harm to the amplifier, your head unit / car radio and your loudspeakers. In any case the warranty will be void!

Important note: This connector does not allow connecting the amplifier to the car's battery. It is mandatory to use the terminals (9) and (11) which are described in the following.

⑧ Fuse

If a severe malfunction inside the amplifier will blow the internal fuses the LED lights up red. The fuses may only be replaced by identically rated fuses (2 x 25 A) to avoid damage of the amplifier.

9 +12 V

Connect the +12 V power cable to the positive terminal of the battery. Recommended cross section: min. 10 mm² / AWG 8.

(10) REM

The remote input has to be used to turn on/off the PP 86DSP if the signal source which is connected to the *System Connector* or *Highlevel Input E* + *F* is not activating the "automatic turn-on" function (*Auto Remote*) or if the amplifier shall only be activated *I* deactivated by a remote signal applied to the remote input.

The remote lead should be connected to the remote output / automatic antenna (aerial positive) output of the head unit / car radio. This is only activated if the head unit / car radio is switched on. Thus the amplifier is switched on and off together with the head unit / car radio. This input needn't to be assigned if the *System Connector* or *Highlevel Input* E + F is used.

(1) GND

The ground cable should be connected to a common ground reference point (this is located where the negative terminal of the battery is grounded to the metal body of the vehicle) or to a prepared metal location on the vehicle chassis i.e. an area which has been cleaned of all paint residues. Recommended cross section: min. 10 mm² / AWG 8.

12 Auto Remote

The PP 86DSP will be turned on automatically if the highlevel inputs of the *System Connector* or the *Highlevel Input* E + F are used or if a signal is applied to the remote input (*REM*) terminal.

The *Auto Remote* switch allows to activate / deactivate the automatic turn-on feature. The feature should be deactivated if there are e.g. disturbing noises while switching on/off the amplifier.

Note: If the automatic turn-on function is deactivated it is mandatory to use the remote input to power up the amplifier! The highlevel signal will be ignored

in this case.

13 Remote Out

We strongly recommend to use this output for turning on/off additional amplifiers that are connected to the *Mono Line Outputs* of the MATCH PP 86DSP. This is essential to avoid any interfering signals. This output is activated automatically as soon as the booting process of the DSP is completed. Additionally this output will be turned off during the "Power Save Mode" or a software update process.

(14) Control Input

This multi-functional connector is designed for MATCH accessory products like a remote control which allows to adjust several features of the amplifier. Depending on the type of remote control, the functionality at first has to be defined in the "Device Configuration Menu" of the DSP PC-Tool software or on the remote control itself.

15 USB Input

Connect your personal computer to the PP 86DSP using the provided USB cable. The required PC software to configure this amplifier can be downloaded from the Audiotec Fischer website **www.audiotec-fischer.com**.

Please note: It is not possible to connect any USB storage devices.

(16) Status LED

The LED indicates the operating mode of the amplifier and which setup has been chosen.

<u>Green:</u>	Setup 1 is loaded.
<u>Orange:</u>	Setup 2 is loaded.
Red:	Undervoltage protection circuit is
	active.
<u>Red flashing:</u>	Internal setup storage is empty (A
	new setup has to be loaded via
	the DSP PC-Tool software).

(7) Control pushbutton

The *Control pushbutton* allows the user to switch between the two setup memory positions. To switch between the setups the button has to be pressed and held for one second. Switching is indicated by a single red flash of the *Status LED*. Pressing the button for five seconds completely erases the internal memory. This is indicated by a constant red flashing of the *Status LED*. **Attention:** After erasing the setups from memory the MATCH PP 86DSP will not reproduce any audio output.

Unique Features of the PP 86DSP

Class HD technology

The PP 86DSP combines the advantages of a Class H technology with the principle of a class D amplifier. The result is an unsurpassed efficiency which easily outperforms any conventional Class D amplifier.

By varying the internal supply voltage depending on the amplifier's amplitude of the input signals, idle losses are significantly reduced and overall efficiency is close to maximum at any time.

Smart highlevel input

The latest generation of OE car radios incorporates sophisticated possibilities of diagnosing the connected speakers. If an usual amplifier will be hooked up failure messages and loss of specific features (e.g. fader function) are often the result but not with the PP 86DSP.

The new ADEP circuit (Advanced Diagnostics Error Protection) avoids all these problems without loading the speaker outputs of the OE radio during high volumes unnecessarily.

Start-Stop capability

The switched power supply of the MATCH PP 86DSP assures a constant internal supply voltage even if the battery's voltage drops to 6 Volts during engine crank. If the supply voltage drops below 10.5 Volts for more than five seconds the amplifier goes to "Protect mode" (*Status LED* lights up red) in order to avoid any further discharge of the car's battery.

Automatic Digital Signal Detection

Switching from analog input to the digital input is done automatically as soon as a signal is detected on the *Optical Input*. This feature can be deactivated in the DSP PC-Tool software. Alternatively you can use an optional remote control for manual switching between analog and digital inputs.

Power Save Mode

The Power Save Mode is incorporated in the basic setup. It allows to significantly reduce the power consumption of the PP 86DSP and potentially connected amplifiers once there's no input signal present for more than 60 seconds. Please note that in many up-to-date cars with "CAN" or any other internal bus structures it may happen that the radio remains "invisibly" turned on for up to 45 min. even after locking and leaving the car! Once the "Power Save Mode" is active the remote output and therefore the connected amplifiers will be turned off. The MATCH PP 86DSP will reactivate the remote output within a second if a music signal is applied. It is possible to either modify the turn-off time of 60 sec. or completely deactivate the "Power Save Mode" via the DSP PC-Tool software.

Installation

Fig. 1 Connection of the amplifier to the head unit /car radio



- (1) The ISO female connector will either be plugged into the vehicle harness that has been disconnected from the car radio or a car-specific adaptor.
- (2) The ISO male connector will either be plugged into the head unit / car radio or into a car-specific adaptor.
- (3) The 20-pole connector will be plugged into the MATCH PP 86DSP amplifier.
- 4 Optional: car-specific adaptor such an adaptor may be required if the ISO connectors of the provided PP 86DSP cable harness does not fit into your head unit / car radio.
- (5) The power supply terminal has to be connected directly to the battery use only adequate cables (cable cross section: min. 10 mm² / AWG 8) and the positive cable should be provided with a main fuse at a distance of max. 30 cm from the battery.

Important: The power supply of the PP 86DSP must never be made via the MATCH connection <u>cable!</u>

The MATCH PP 86DSP must be connected to the head unit (car radio) as follows:

Caution: Carrying out the following steps will require special tools and technical knowledge. In order to avoid connection mistakes and/or damage, ask your dealer for assistance if you have any questions and follow all instructions in this manual (see page 15).

1. Connecting the Plug & Play cable harness

- After removing the head unit / car radio from the dash using appropriate tools, disconnect the vehicle harness from the car radio. Next, connect the vehicle harness to the female connector of the MATCH cable harness, see fig. 1 (1). Depending on your car an additional car-specific adaptor may be required. A list of all cars and the respective adaptors can be found on www.audiotec-fischer.com.
- 2. Connect the male connector of the MATCH cable harness or the car-specific adaptor to the head unit / car radio, **see fig. 1** (2).

Note - Cars equipped with MOST bus:

In cars equipped with MOST bus structure it is mandatory to unplug the fiber-optic cable from the original car radio connector and insert it into the car radio connector of the MATCH cable harness which has a dedicated recess for this.

2. Connecting the highlevel speaker inputs E and F (optionally)

The highlevel loudspeaker inputs E and F can be connected directly to the loudspeaker outputs of an OEM or aftermarket radio using appropriate cables (loudspeaker cables with 1 mm² / AWG 18 max.).

Make sure that the polarity is correct. If one or more connections have reversed polarity it may affect the performance of the amplifier. If this input is used the remote input (*REM*) does not need to be connected as the amplifier will automatically turn on once a loudspeaker signal is received.

Please note: This input has to be used for car radios with 6-channel highlevel output because the MATCH connection cable only provides four

highlevel channels.

3. Adjustment of the input sensitivity

The *Input Sensitivity* control (page 17, item 5) is used to adapt the input sensitivity to the output voltage of the connected head unit / car radio. Adjustments with this control do not affect the optical input! This control is no volume control and is only for adapting the input sensitivity. The ex works setting of the highlevel input sensitivity of the PP 86DSP is the maximum counterclockwise position.

If the highlevel inputs of the System Connector or the Highlevel Input E + F are used in combination with a standard car radio we recommend an input sensitivity of roughly 9 Volts. For this purpose turn the control from max. CCW position to 9 o'clock position.

Important note: Please make sure that you choose an appropriate sensitivity setting that the *Clipping LED* (page 17, item 4) never lights up.

4. Connecting a digital signal source

If you have a signal source with an optical digital output you can connect it to the amplifier using the appropriate input. In standard configuration the MATCH PP 86DSP automatically activates the used digital input if a digital audio signal is detected. This function can be deactivated via the DSP PC-Tool software. Alternatively you can manually activate the digital input if you are using the optional remote control.

The automatic turn-on circuit does not work when the digital input is used. Therefore it is mandatory to connect the remote input (*REM*). Please note that it is possible to connect a source to the digital input and the highlevel inputs at the same time.

Important: The signal of a digital audio source normally does not contain any information about the volume level. Keep in mind that this will lead to full level on the outputs of the MATCH PP 86DSP. This may cause severe damage to your speakers. We strongly recommend to use an optional remote control for adjusting the volume level of the digital signal input!

Information: The PP 86DSP can only handle uncompressed digital stereo signals in PCM

Installation

format with a sample rate between 12 kHz and 96 kHz and no Dolby-coded signals.

5. Connection to power supply Make sure to disconnect the battery before installing the MATCH PP 86DSP!

The power supply of the PP 86DSP never ever occurs via the MATCH cable harness. Always directly connect the massive screw terminals of this amplifier to your car's battery! Never use the power leads of the car radio itself! Though the PP 86DSP only has a limited average power consumption, it may draw very high currents (up to 50 A) for the fraction of a second due to its dynamically controlled internal power supply. Important: You may risk a severe damage of your head unit / car radio and other electronic components inside your vehicle or even a cable fire if you use the car radio harness for the power supply of the PP 86DSP!

Connect the +12 V power cable to the positive terminal of the battery. The positive wire from the battery to the amplifier power terminals needs to have an inline fuse (50 A) at a distance of less than 12 inches (30 cm) from the battery. If your power wires are short (less than 1 m / 40") then a wire gauge of 6 mm² / AWG 10 will be sufficient. In all other cases we strongly recommend gauges of 10 - 16 mm² / AWG 8 - 6! The ground cable (same gauge as the +12 V wire) should be connected to a common ground reference point (this is located where the negative terminal of the battery is grounded to the metal body of the vehicle) or to a prepared metal location on the vehicle chassis, i.e. an area which has been cleaned of all paint residues.

6. Connecting the remote input

The remote input has to be connected to the radio remote output if the amplifiers *Optical Input* is solely used as signal input. We do not recommend controlling the remote input via the ignition switch to avoid pop noise during turn on/off. If the highlevel inputs of the *System Connector* or the *Highlevel Input E* + *F* are used this input does not need to be connected as long as the car radio has BTL output stages.

7. Configuration of the remote input

The PP 86DSP will be turned on automatically if the highlevel inputs of the *System Connector* or the *Highlevel Input E* + *F* are used or if a signal is applied to the remote input terminal. The *Auto Remote* switch (page 18, item 12) allows to deactivate the automatic turn-on feature. The feature should be deactivated if there are e.g. noises while switching on/off the amplifier. **Note:** If the automatic turn-on function is deactivated it is mandatory to use the remote input terminal to power up the amplifier! The highlevel

signal of the *System Connector* and *High-level Input* E + F will be ignored in this case. To deactivate the automatic turn-on feature you have to change the position of the *Auto Remote* switch to "Off".

8. Configuration of the internal DSP The general amplifier settings should be conducted with the DSP PC-Tool software before using the amplifier for the first time. Ignoring this advice may result in damaging the connected speakers / amplifiers. Especially if the PP 86DSP will be used to drive fully active speaker systems, a wrong setup can destroy your tweeters right away. Information about connecting the PP 86DSP to

a computer can be found on page 25.

9. Connecting the loudspeaker outputs E - H

The loudspeaker outputs allow to connect a passive Plug & Play subwoofer like the MATCH PP 10E-D or further loudspeakers (e.g. center speaker etc.). For the connection of a Plug & Play subwoofer you have to connect the 8-pole Molex connector of the connection cable which is delivered with the subwoofer to the *Speaker Output E - H*.

Afterwards the appropriate subwoofer has to be activated in the DCM menu of the DSP PC-Tool software.

Note: The PP 86DSP uses four amplifier channels for driving the subwoofer.

Alternatively the loudspeaker outputs can be connected directly to the wires of further loudspeakers by using the 8-pole connection cable which is included in delivery. Never connect any of the loudspeaker cables with the chassis ground as this will damage your amplifier and your speakers. Ensure that the loudspeakers are correctly connected (in phase), i.e. plus to plus and minus to minus. Exchanging plus and minus causes a total loss of bass reproduction. The plus pole is indicated on most speakers. The impedance of the speakers must not be lower than 2 Ohms, otherwise the amplifier protection will be activated.

Attention: Solely use the connection cable with the 8-pole connector and flying leads which is included in delivery for connecting further loudspeakers!

10. Connecting the remote output

This output (*Remote Out*) is used to supply remote signals to additional amplifier/s that are connected to the *Mono Line Output* of the PP 86DSP. Always use this remote output signal to turn on the amplifiers in order to avoid on/ off switching noises.

Caution:

The PP 86DSP amplifier has a higher power output than the head unit / car radio itself. Most of the OE speakers in the car will not be able to handle this extra power permanently. As long as you do not replace the original speakers by loudspeakers with higher power handling be very careful when you crank up the volume. If you hear strong distortion, please reduce the volume to an appropriate level in order to avoid damaging your speakers.

Note: Audiotec Fischer is not responsible for any damages to OE speakers that are used in combination with the PP 86DSP!

5-channel application

2-way passive system + Coaxial system + Passive Plug & Play subwoofer



Plug & Play subwoofer

Rear: Coaxial system

This is a classical 5-channel setup where four of the eight amplifier channels are used to drive a MATCH subwoofer. We strongly recommend to use this configuration only in combination with our subs PP 10E-D or PP 8E-Q.

6-channel application

2-way passive system + Coaxial system + Two subwoofers with dual voice coil



Subwoofer MW 8BMW-D

In this 6-channel configuration each subwoofer chassis will be driven with two channels of the PP 86DSP. For this configuration it is necessary to define the outputs of the PP 86DSP with the Audiotec Fischer DSP PC-Tool software as subwoofer outputs.

Connection to a PC

It is possible to freely configure the MATCH PP 86DSP with our DSP PC-Tool software.

The user interface is designed for easy handling of all functions and allows an individual adjustment of each of the nine DSP channels. Prior to connecting the amplifier to your PC visit our website and download the **latest version of the DSP PC-Tool software**.

Check from time to time for software updates. You will find the software and the respective user manual on **www.audiotec-fischer.com**.

We strongly recommend to carefully read the user manual (Sound Tuning Magazine) before using the software for the first time in order to avoid any complications and failures.

Important: Make sure that the amplifier is not connected to your computer before the software and USB driver are installed!

In the following the most important steps how to connect and the first start-up are described:

 Download the latest version of the DSP PC-Tool software (available on our website www.audiotec-fischer.com) and install it on your computer.

- 2. Connect the amplifier to your computer using the USB cable that is included in delivery. If you have to bridge longer distances please use an active USB extension cable with integrated repeater and no passive extension.
- **3.** Turn on the amplifier and start the software after the *Status LED* lights up green. The operating software will be updated automatically to the latest version if it is not up-to-date.
- 4. Now you are able to configure your MATCH PP 86DSP with our intuitive DSP PC-Tool software. Nevertheless, interesting and useful hints can be found e.g. in our "Sound Tuning Magazine", which can be downloaded for free from our website.

Caution: We highly recommend to set the volume of your head unit / car radio to minimum position during first start-up. Additionally no devices should be connected to the *Mono Line Output* until general settings in the DSP PC-Tool software have been made. Especially if the PP 86DSP will be used in fully active applications, a wrong setup can destroy your speakers right away.



Load and save
Main menu
Channel configuration
Highpass filter
Lowpass filter
Lowpass filter
Time alignment
Output level
Frequency graph
Range of frequency graphs
Equalizer
EQ fine adjustment

Installation of a MATCH Extension Card

It is possible to extend the functionality of the MATCH PP 86DSP amplifier by inserting an optional MATCH Extension Card (MEC) - for example a *Bluetooth*[®] Audio Streaming module, an AUX input or an USB audio input.

To install a MATCH Extension Card it is necessary to remove the side panel of the PP 86DSP and replace it by the new side panel that comes with the MEC module.

Attention: Install the MEC module only in the designated device and its specific slot. Using the MEC module in other devices or slots can result in damage of the MEC module, the amplifier, the head unit / car radio or other connected devices!

Read in the following the steps how to install a MEC module:

- 1. First disconnect all cables from the device.
- 2. Dismantle the side panel where the System Connector input is located by removing the Phillips screws.
- 3. Pull out the bottom plate.
- **4.** Prepare the module for installing it into the device. Any further mounting information will be found in the instruction manual of the respective MEC module.
- Insert the MEC module into the specific slot of the device which is marked in the following picture.



6. Make sure that the MEC module is installed properly and all pins are fully inserted into the socket.





- **7.** Reinsert the bottom plate and fix the new side panel which is delivered with the MEC module with the Phillips screws.
- 8. Bolt the MEC module to the side panel. Precise mounting information will be found in the instruction manual of the respective MEC module.
- 9. Reconnect all cables to the device.
- **10.** Turn on the amplifier. The MEC module is automatically detected by the device and the Status LED of the MEC module lights up green.
- **11.** Now you are able to configure the MEC module in the DSP PC-Tool software.

Technical Data

Output power RMS / max.	
- All channels @ 4 Ohms	8 x 55 / 110 Watts
- All channels @ 2 Ohms	8 x 70 / 140 Watts
Inputs	6 x Highlevel speaker input
	1 x Optical SPDIF (12 - 96 kHz)
	1 x Remote In
Input sensitivity	5 - 11 Volts
Outputs	8 x Speaker
	2 x RCA / Cinch (mono)
	2 x Remote Out
Output voltage RCA / Cinch	3 Volts RMS
Frequency response	20 Hz - 22,000 Hz
DSP resolution	64 Bit
DSP power	
Sampling rate	48 kHz
Signal converters	A/D: BurrBrown
	D/A: BurrBrown
Signal-to-noise ratio	> 103 dB (A-weighted)
Distortion (THD)	< 0.015 %
Damping factor	> 100
Input impedance	13 Ohms
Operating voltage	10.5 -16 Volts (max. 5 sec. down to 6 Volts)
Max. remote output current	500 mA
Dimensions (H x W x D)	44 x 185 x 164 mm / 1.73 x 7.28 x 6.46"
Additional features	Class HD technology with dynamically controlled
	power supply, Start-Stop capability, Control Input,
	USB, MEC slot, Auto Remote switch, galvanically
	isolated Line Out

Warranty Disclaimer

The limited warranty comply with legal regulations. Failures or damages caused by overload or improper use are not covered by the warranty. Please return the defective product only with a valid proof of purchase and a detailed malfunction description. Technical specifications are subject to change! Errors are reserved! For damages on the vehicle and the device, caused by handling errors of the device, we can't assume liability. These devices are certified for the use in vehicles within the European Community (EC).

Note:

[&]quot;The *Bluetooth*[®] word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by Audiotec Fischer GmbH is under license. Other trademarks and trade names are those of their respective owners."



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