Operating Instructions

AMV7240DSC

Automatic mixer/amplifier

SCOPE OF DELIVERY

- Mixing Amplifier AMV7240DSC
- 19" rack bracket (pre-assembled)
- Mains connection cable
- Adjustment screwdriver
- USB stick with current software

Unit dimensions:
430x335x88 mm (LxDxH) without rack bracket

Weight:
10.15 kg net, 13 kg shipping weight

FOREWORD

The axxent AMV7240DSC mixer amplifier is delivered from the factory with presettings that allow it to be used immediately in standard sound reinforcement applications without any further modifications. For the user, only the front panel controls are relevant. In addition, the user can recall the sound parameters stored in memory locations with the preset push-button.

All other possible settings, both the ana- logue channel settings, which can be set via the cover plate on the top that is to be removed, and the setting of DSP signal parameters, which can be conveniently set via a connected computer, are reserved for the installer of the system.

The user must not open the housing of the AMV7240DSC for reasons of electrical safety!

COMMISSIONING

After unpacking the unit, plug the enclosed protective contact mains cable with the IEC flat plug into the mains socket of the unit. Before plugging the earthed plug into your mains socket, please make sure that the "POWER" switch on the right front of the appliance is in the "OFF" position. Then plug in the grounding plug. The main volume control (MASTER VOLUME) should also be set to zero (completely to the left).

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FRONT CONTROLS

1: MIC/LINE = Labelling fields

2: LIMIT = Audio signal may cause the limit indicator to flash. If permanent, distortion may occur. Then reduce the volume control accordingly.

3: AUTO OFF = Pressing in the mic switch deactivates the automix function of this input channel.

4: ACTIVE = Indicates the microphone that is active due to the automatic switch.

5: VOLUME = level setting of the corresponding microphone

6: AUX1 and AUX2 = switch between these two aux inputs

7: VOLUME = level adjustment of the aux inputs

8: LOW = bass level of the aux input

9: HIGH = High tone setting of the off input

10: POWER OUT1, ACTIVE = output level presence display

11: POWER OUT1, LIMIT = This indicator should not be permanently lit. Otherwise, reset it with MASTER VOL.

12: MASTER VOL = The overall level control affects the built-in power amplifier and LINE OUT 1, as well as LINE OUT 2.

13: ON = switch-on display

14: POWER = mains switch

15: USB BOCKET for connecting and remotely controlling the AMV7240DSC to and through computers, laptops or tablet computers (Windows).

16: PRESET = Push/turn switch for recalling pre-set signal parameters from the computer or for setting signal parameters.

17: CH1 = Mute indicator, triggered by remote control from the computer or directly from the preset switch.

18: CH2 = as for CH1

19: LCD DISPLAY of all channel operating parameters, levels, etc.

DESCRIPTION OF THE FRONT

On the left-hand side you will find five level controls for operating the microphone and line level inputs. In the basic function, the inputs are set for microphones. In the basic setting, phantom power for electret or condenser microphones with 48 V is applied.

The microphone/line level inputs are automatic inputs that are only enabled at a certain sound level that hits the microphone. You can see this from the green LED display
"ACTIVE". The automatic function can be switched off by means of a thin pin (AUTO OFF). In the default setting, this switch is not pressed and the automatic function is therefore active. The red LED above the switch indicates the effect of the automatic function. Limiter circuit (LIMIT). The limiter circuit prevents overdriving of the unit.

In the middle of the front panel you see the switching and control unit for the AUX inputs. These are the auxiliary level inputs for e.g. CD players, wireless microphones, MP3 players, etc. These AUX inputs are located on the rear and are internally switched to mono in parallel. On the front, the required AUX input is selected by means of a switch of either AUX-1 or AUX-2, the level of this AUX input is adjusted and the bass and treble components are selected.

On the right side of the front panel is the main volume control with the level display and the limiter effect display. Of course, there is also the mains control display. On the far right is the on/off switch.

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BACK

1: IEC POWER SUPPLY with fuse holder. Fine-wire fuse 4 amperes slow-blow. In the event that this fuse should "blow" (small green mains indicator on the front), please replace it. If the fuse blows again, please take the appliance to a specialist company or send it to the manufacturer.

2: Loudspeaker connection in the form of a screw/plug-in terminal strip. Here you have the option of connecting low-impedance speakers with a terminating impedance of 4 ohms or more and constant-voltage speakers with 50 V, 70 V and 100 V connections. Under no circumstances should low-impedance and high-impedance outputs be loaded together!

3: LINE OUT 1 XLR output, 3-pole with identical sound settings as the speaker connection (controlled by channel A of the DSP). The Line Out 1 connection can drive additional amplifiers if more power is required.

4: LINE OUT 2 XLR output, 3-pole is controlled by channel B of the DSP and can have completely different sound settings to channel A. This connection is often used to control remote speakers with a time delay.

5: LINE OUT 3 XLR output, 3-pole is located before the DSP and therefore without sum sound influence. It is mostly used to control induction loop amplifiers.

6: RECORD cinch sockets, which are used to record the sum signal.

7: AUX1/AUX2 cinch sockets for connecting e.g. CD player or MP3 player. The corresponding selector switch is located on the front panel.

8: XLR-COMBO-INPUT BOOKS with the designation-. For microphones, the 3-pin connections are used. For line connections, the 6.3 mm 3-pin jack connections of the combo jacks are used. The line inputs have a resistor pre-attenuation.

IMPORTANT!

The basic functions of the AMV-7240DSC mixer amplifier are preset to standard functions. Additional functions for special purposes can be set internally. For safety reasons, these settings may only be made by qualified persons.

The internally possible additional settings include:

- 3-band equalisation per input
- Threshold value of the automatic mix function (gate)
- Limit setting per input
- Gain setting per input
- Compressor setting per input
- Phantom power can be switched off per channel
- Ducking (lowering/suppression) of the aux signal by the microphone signals
- Programming of scenes with different signal parameters by computer.

The AMV7240DSC has an amplifier output with 240 W power. The output transformer with 50 V, 70 V and 100 V is galvanically isolated. In addition, it is possible to connect low-impedance loudspeakers down to 4 ohms. Do not load both outputs together!

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OTHER FUNCTIONS

In the following, you can see the details of the possible internal settings. Once again, it is important to note that only qualified personnel may make these settings, as the cover plate of the upper part of the housing or the upper part of the housing must be removed for this purpose and there is a risk of electric shock when the mixer amplifier is switched on.

The AMV-7240DSC is delivered from the factory with screwed-on side mounts for 19" rack mounting. You can unscrew these "rack ears" for normal table use.

We wish you trouble-free operation and good sound with the AMV-7240DSC. It complies with
is of a high quality standard in all data, is very low-noise and level stable.

The AMV7240 MKII has a metal plate on the top that can be removed by loosening 6 metal screws. The parameters of the channel inputs (gain, 3-band EQ, compression, noise gate) can be adjusted from the top using the enclosed adjustment screwdriver.

If the AMV7240 MKII is already in the 19" rack, you can also adjust the parameters by removing it to the front (about 10 cm).

IMPORTANT!
Unauthorised persons should not have access to the internal setting options.

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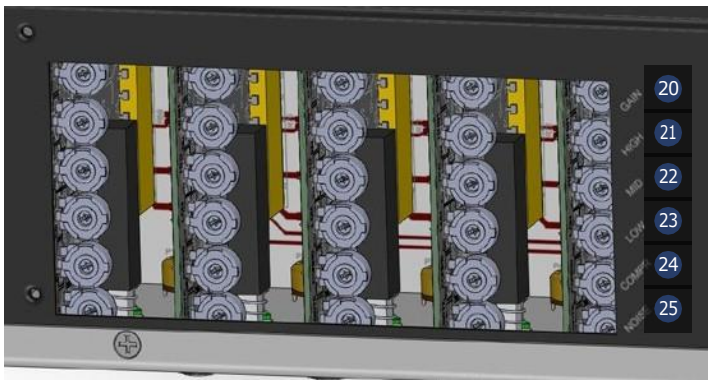
1. Basic settings of the amplifier (level/microphone input sensitivity)

Set the VOLUME control in the master section on the front panel to the 4th line from the left. Release the jumper J5, AUTO ON on the base PCB (see page 9) - this disables the automatic mixing function.

Set the level for MIC/LINE 1 on the front panel to max, the other inputs (2 to 5) to min.



20: GAIN = up to 40 dB gain. Line inputs have series resistors for attenuation.

21: HIGH = High frequency amplification

22: MID = centre control

23: LOW = low frequency control

24: COMPR = Compressor/Limiter setting. Compressor acts on green LED; Limiter on red.

25: NOISE = Threshold setting of the automatic gate circuit. Switch on the front.

Adjust the microphone input sensitivity with the trimmers marked GAIN on the PCB to obtain maximum sensitivity (gain) before feedback. Note that at realistic speaking distance the limiter should not respond.

Adjust the microphone input corrections HIGH, MID, LOW (trimmers on the PCB) so that the desired sound results, taking into account the sound characteristics of the microphone. If necessary, correct the level so that the distance to the feedback limit is ensured.

Repeat the above settings and adjustments also for all inputs to which a microphone is connected for the current installation.

With the COMPR trimmer (on mic input PCB), the threshold value for the use of signal compression can be selected. With the NOISEGATE trimmer, the threshold for the gate onset point can be set (use of gain reduction by 10 dB).

A sub-bass filter (high pass, 150 Hz cut-off frequency) can be activated with the SUBBASS jumper (e.g. to improve speech intelligibility in installations with high noise levels).

The microphone inputs can also be used as line inputs. Automatic mixing and compression can be deactivated by pressing AUTO OFF of the corresponding input on the front panel.

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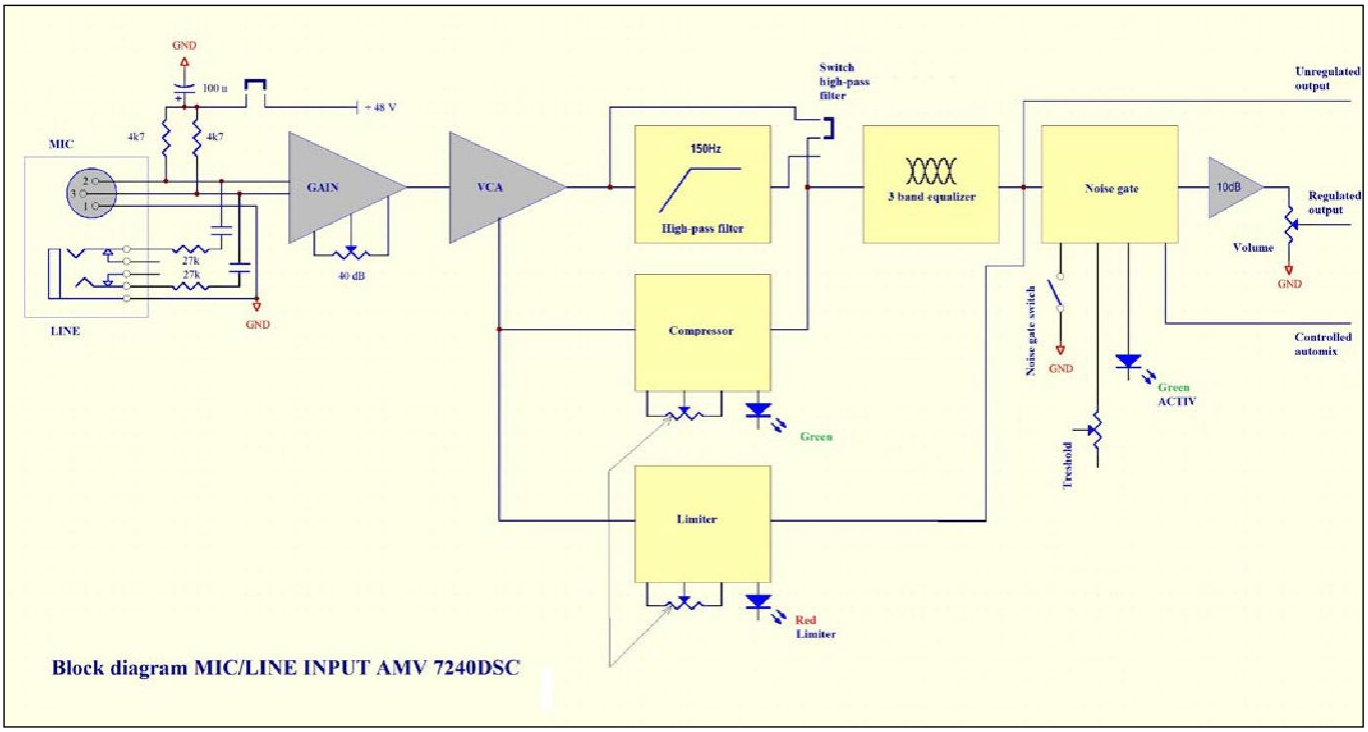
Block diagram of the MIC/LINE inputs:



2. Settings for Automatic Mixing

After setting the gain of the microphones, reinsert jumper J5 (see page 9). Now please check whether the auto-mix function is working correctly - i.e. that only the microphone being discussed is switched through (green LED ACTIVE). If several microphones are switched through although only one microphone is being used, or if the microphone is switched through due to normal ambient noise, please adjust the gain of the respective microphone gradually.
until a correct threshold value of the gate is reached. Repeat this for all microphones. Lost gain on the input channel can be made up by the sum level.

3. Settings Volume

In normal operation, the MIC/LINE potentiometers are set to maximum. Inputs that are not used are set to minimum. The AUTO OFF switch should also be activated for these inputs in order not to influence the automatic mixing. The overall volume is adjusted with the VOLUME control. Be careful when using the coupler.

In rooms with a lot of reflections and little damping, first set the control to position 4. In acoustically better damped (absorbing) rooms, the usable total volume can be increased. Again, pay attention to the feedback limit.

4. AUX setting

Select the input signal AUX 1 or AUX 2 by pressing the buttons on the front panel (AUX CONTROL section). By adjusting the GAIN AUX trimmer, the sensitivity can be set so that there is no signal limiting (at VOLUME 4) - see LIMIT LED in the master section. Set the desired volume with the VOLUME potentiometer (on the front panel in the AUX CONTROL section). The sound (timbre) is adjusted by adjusting the LOW and HIGH potentiometers.

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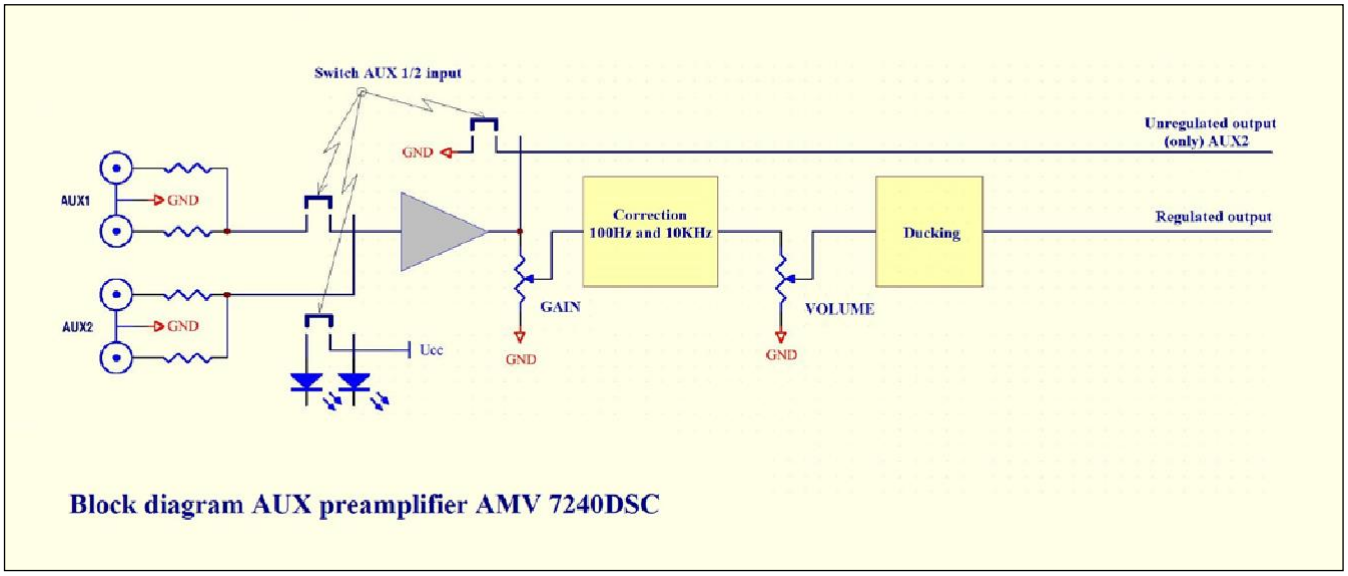
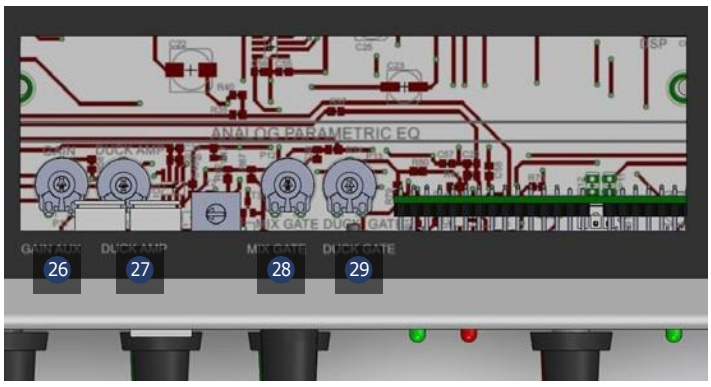
Block diagram of the AUX inputs:



5. Ducking (automatic signal attenuation)

Apply the signal to the AUX input and move the DUCK AMPL trimmer to the centre position. Make a speech test at the MIC/LINE input. The DUCK GATE threshold can be adjusted at the trimmer of the same name so that the AUX signal is attenuated to the desired degree. In the basic setting, a certain degree of attenuation is noticeable. For standard use in churches, we recommend setting the Duck Gate to off - i.e. the trimmer all the way to the right in a clockwise direction.



26: GAIN AUX = gain setting of the AUX input

27: DUCK AMP = Automatic signal attenuation of the aux input

28: MIX GATE = Threshold setting of the GATE circuit of the sum signal

29: DUCK GATE = Threshold setting for the signal attenuation of the aux input.

6. Amplifier output level

When setting up the system in heavily damped rooms where the highest amplifier output power can be used, set the VOLUME control in the MASTER area on the front panel so that no permanent limiter action starts (recognisable by the LIMIT LED lighting up). The limit LED can also indicate an overload of the amplifier.

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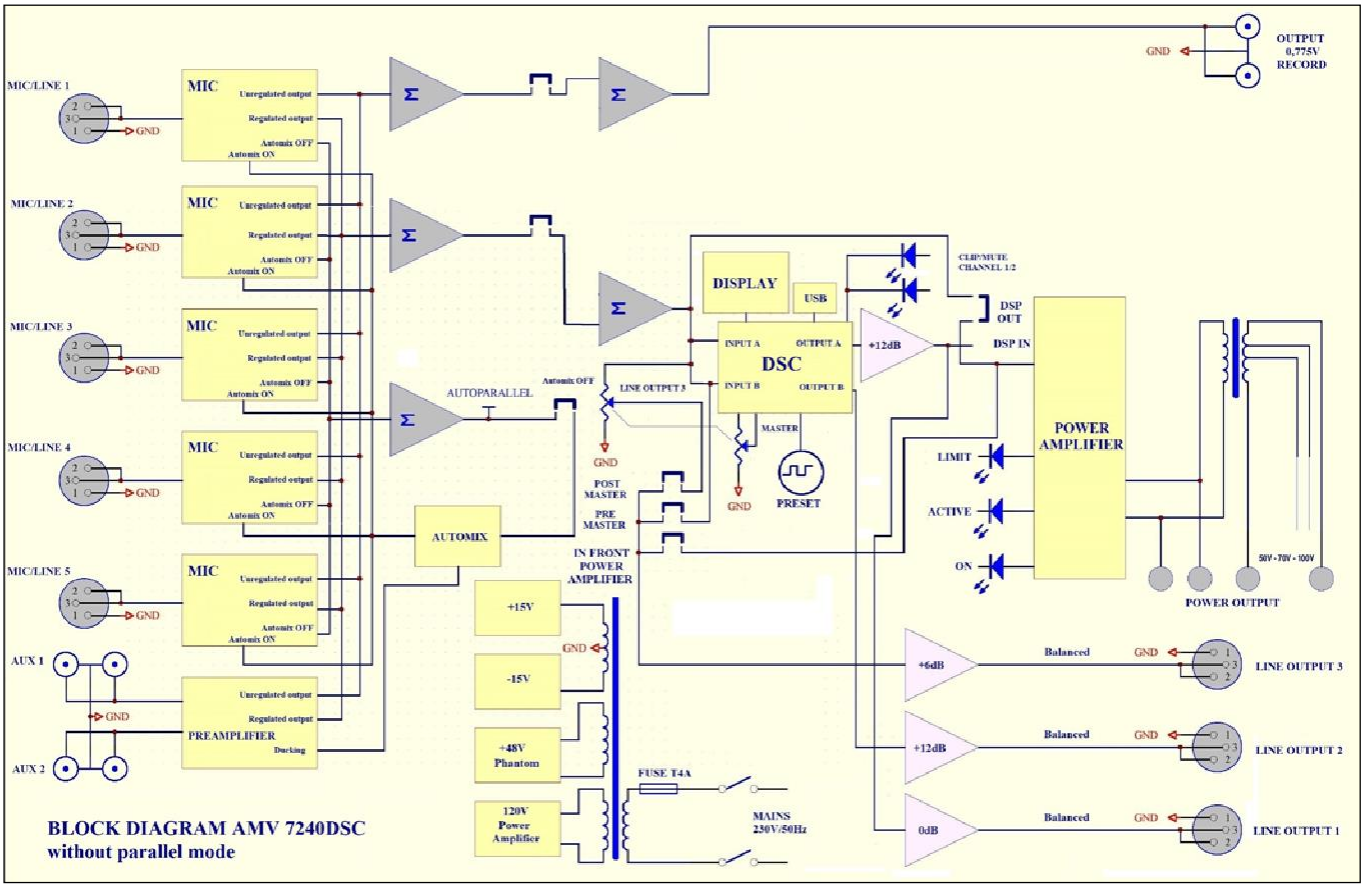
Other amplifier functions

Microphone signals can be recorded at the RECORD outputs without being affected by the volume setting.

The AMV7240 MKII has three LINE OUT, 3-pin XLR balanced with a rated level of 1.55 V. These line level outputs are used to drive subsequent amplifiers, also e.g. induction loop amplifiers.

Here you will find a block diagram of the AMV7240DSC. You can see here, among other things, how the DSP is inserted in the sum signal.



As you can see, the DSP controls the power amplifier with channel A. At the

same time, channel A of the DSP controls LINE OUT 1.

Channel B of the DSP controls LINE OUT 2. Here you have the option of controlling downstream amplifiers (remote loudspeakers) via an independent sound input or e.g. with a delay.

In the default setting, LINE OUT 3 is located before the DSP. It is therefore mostly used for connecting induction loop amplifiers.

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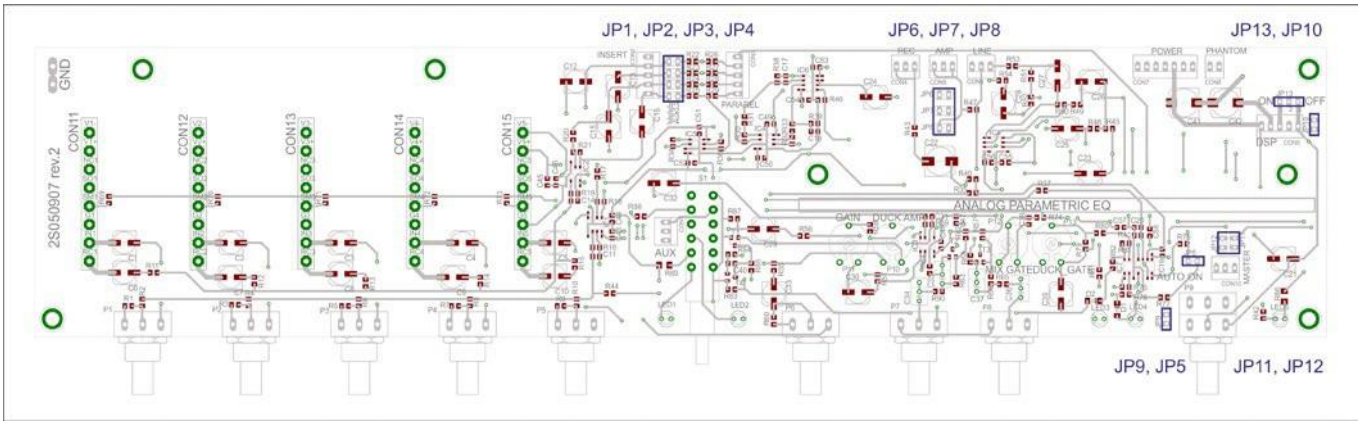
The setting can be changed as required via jumpers JP6, JP7 and JP8 on the master board.

A drawing of the jumpers for localisation and a description can be found below:



JP1, JP2, JP3, JP4 are always set.

JP5 - is set for general automixing /AUTO ON

DSP influence:

JP6 - set (while JP7 and JP8 are off) for PRE MASTER

JP7 - set (while JP6 and JP8 are off) for POST MASTER (default factory setting)

JP8 - set (while JP6 and JP7 are off) for before amplifier

JP10 - always set

JP9, JP11, JP12 - always off

JP13 - set to use DSP, pos. OFF to DSP bypass.

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DIGITAL SIGNAL PROCESSOR

The axxent AMV7240DSC has a powerful DSP of the most advanced design.

Features

- 2 channels
- Processes the signal sum for the power amplifier
- Second channel for connected amplifiers with independent signal processing
- Delay up to 290 ms or 99.5 m
- Input routing
- Multiband EQ with parametrics, shelving, notch filter, allpass
- Characteristics Butterworth, Linkwitz-Riley, Bessel
- Slope in 6 dB steps from 6 dB to 48 dB
- Autolevel, Limiter, Gain
- Front USB socket for connection to computers (Windows)
- Current software is supplied on USB stick
- Preset selector with two-line display on the AMV7240DSC allows settings to be made
- Password protection
- 20 presets possible
- Default factory preset

Description

The AMV7240DSC Digital Sound Processor is a German product, developed and manufactured in Germany. This ensures that updates and software maintenance are also guaranteed in the future.

As you can see on the front of the AMV7240DSC, there is a two-line LCD display, a USB socket and a "preset" control button.

The display can show the levels of both DSP channels as well as the parameters of the signal settings.

Up to 20 presets can be called up using the "Preset" control button, which is a push selector switch. A password can also be entered here. In addition, various signal parameters can be edited.

Operating software is supplied with the AMV7240DSC. Also a product-specific factory preset. You must therefore load the software onto a computer. As the operating software contains an .exe file, anti-virus and firewall programs must be deactivated for a short time. Then the existing factory preset can be loaded.

When you load the operating software, it is like this:

- Open Digital Sound Control V1.3*. You see the 4:4 software
- Afterwards, please call up the file "AMV7240DSC" only the path under "File" > "open Project Location" and click away.
- Then click on "File" and >"open project", "AMV7240DSC" and the application file is loaded.

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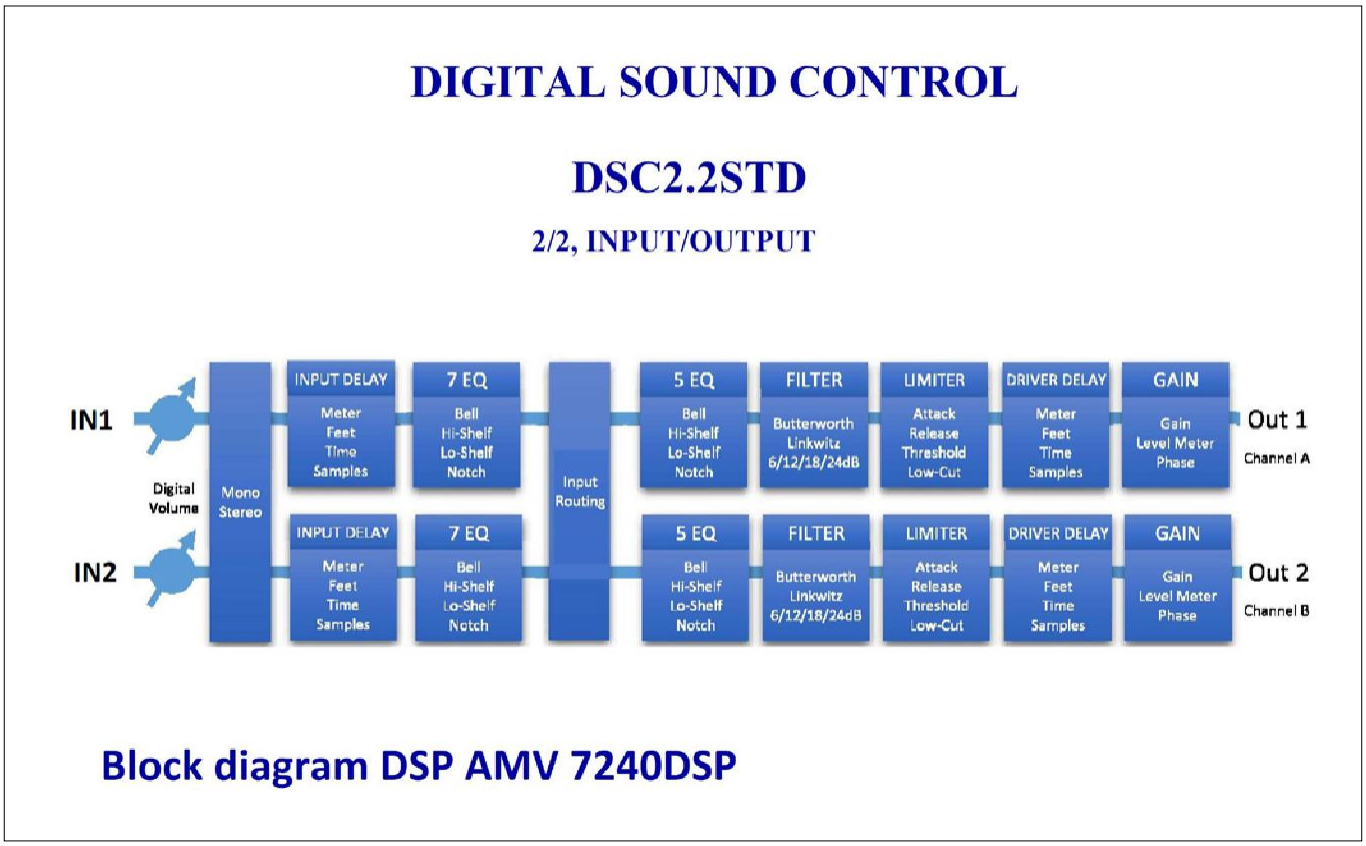
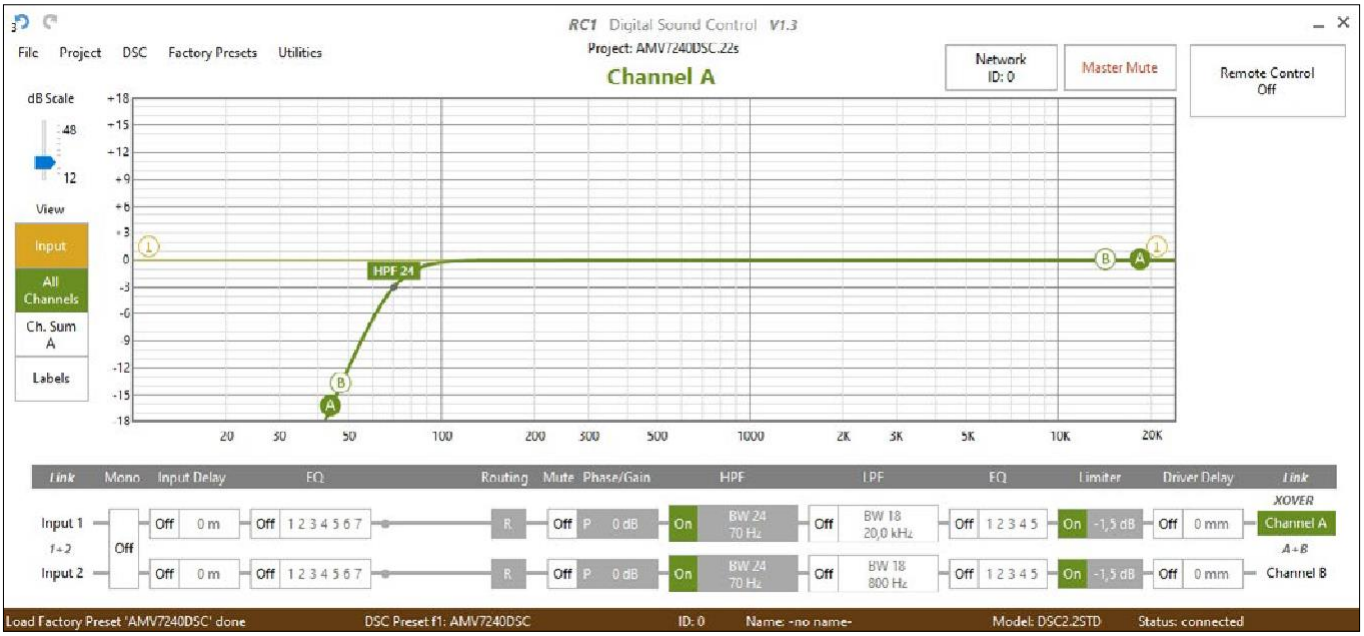
Here you will find a block diagram of the DSP:



Block diagram DSP AMV 7240DSP

Here is a representation of the factory preset supplied:



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As you can see, a high-pass filter with a cut-off frequency of 70 Hz is set here, Butterworth with 24 dB slope.

To connect the AMV7240DSC to your computer, use a standard USB-B connection cable. Then use the "Remote Control Off" button, which you click, to establish the connection with the AMV7240DSC. Now "Remote Control On" appears in green.

You can now create, copy, save, copy to the AMV7240DSC, etc. any presets.

CE Declaration of Conformity

PRODUCT: Low frequency amplifier for public address systems

TYPE: axxent AMV7240DSC

The product is intended for amplifying audio signals and for operation with loudspeakers.

We hereby declare under our sole responsibility that this complies with the requirements laid down in the Council Directives on the approximation of the laws of the Member States of the European Community relating to electromagnetic compatibility (EMC) - 2014/30/EU and in the Low Voltage Directive 2014/35/EU.

The following standards were used to assess the products with regard to EMC interference radiation: EN55032:2015, Class B; EN61000-3-2, -3. For compatibility, the following standards were used: EN55024:2010+A1:2015; EN61000-4-2, 3,4,5,6,8,11.

The following standard was used to assess the products with regard to the Low Voltage Directive: EN60950-1 of 2006 + A11+A12+A2.

Furthermore, the product described above complies with the provisions of Directive 2011/65/EU of the European Parliament and of the Council on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

MANUFACTURER: axxent e.K.
LOCATION: 63571 Gelnhausen, Zum Wartturm 15
NAME: Josef Becker, Owner

DATE: 14 September 2020

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