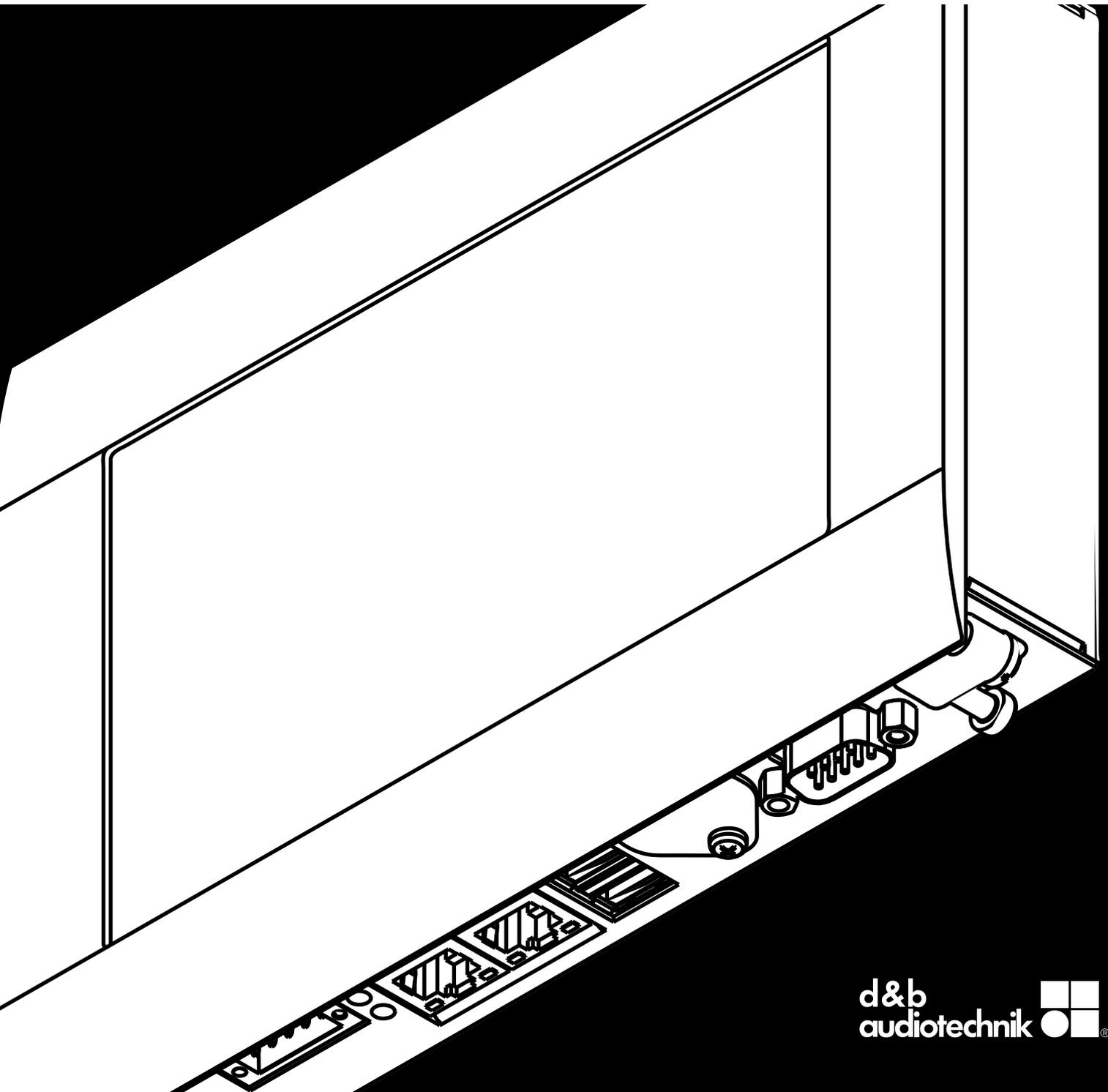


R

R90
Manual 1.3 en



General information

R90 Manual

Version: 1.3 en, 06/2020, D2403.EN .01

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Keep this document with the product or in a safe place so that it is available for future reference.

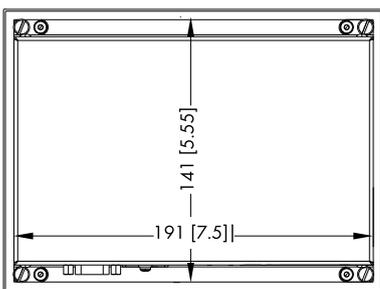
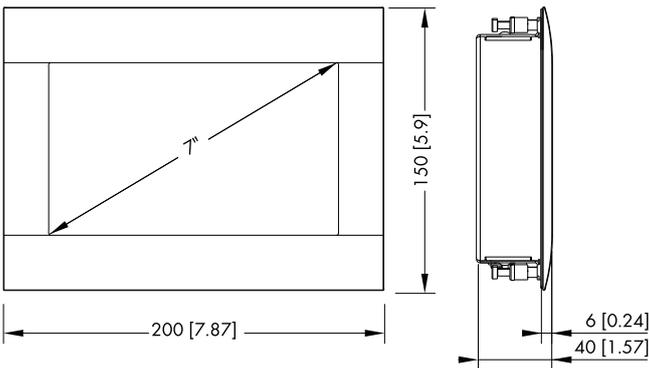
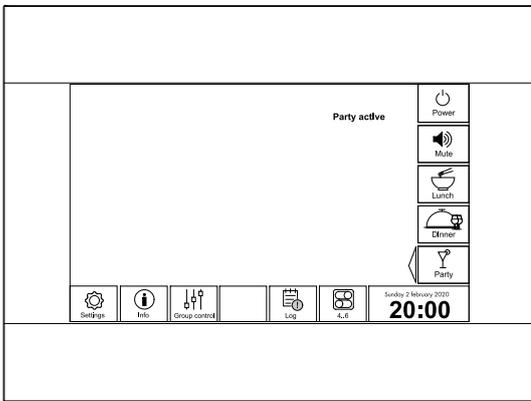
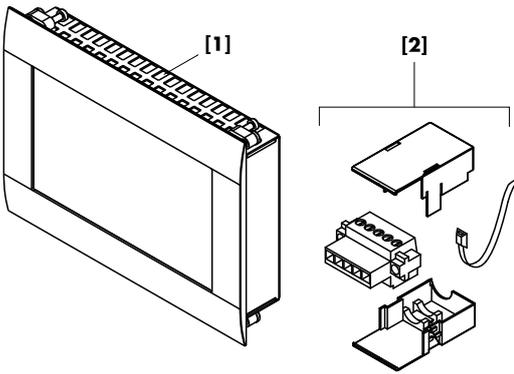
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- 1 R90 Touchscreen remote control..... 4**
- 1.1 Scope of supply..... 4
- 1.2 Intended use..... 4
- 1.3 Technical specifications..... 4
- 2 R90 Hardware..... 5**
- 2.1 Power supply..... 5
- 2.2 Fit the power supply cable..... 5
- 2.3 LAN 6
- 2.4 USB..... 6
- 2.5 Ground connection..... 6
- 2.5.1 Earthing measures..... 6
- 2.6 Connecting cables..... 6
- 3 R90 Software..... 7**
- 3.1 Software Terms of Use..... 7
- 3.2 Interface..... 7
- 3.3 Settings..... 8
- 3.3.1 Login..... 8
- 3.3.2 System configuration..... 8
- 3.3.3 Project setup..... 10
- 3.4 System time and date..... 13
- 3.5 Factory reset..... 13
- 4 R90 Web Remote interface..... 14**
- 5 R90 Log..... 15**



R90 dimensions in mm [inch]

1.1 Scope of supply

Please verify the shipment for completeness and proper condition of the items.

Qty.	d&b code	Description
1	Z6126	R90 Touchscreen remote control [1]
Including:		
1		Power supply plug [2] incl. upper/lower strain relief housing and cable tie.
1	D2403.EN .01	R90 Manual

1.2 Intended use

The R90 Touchscreen remote control is a dedicated solution to control any d&b audio installation. It is intended as an additional remote control device to recall AmpPresets and provide quick access to basic functions, such as global power, mute, level, and grouping, without using the d&b R1 Remote control software.

Using the OCA/AES70 protocol, it allows easy setup and control without the need of any additional program code.

Feature set

- Up to 15 amplifiers
- Recalling up to 9 AmpPresets
- Global power (on/off)
- Master mute
- Grouping (Mute, Level)

1.3 Technical specifications

Interfaces

..... 1 x on-board ethernet adapter 10/100BASE-T with RJ-45 connection
 2 x USB 2.0

Protection class

Front side IP54
 Rear side IP20

Permissible ambient temperature

Operation 0°C to +55°C
 Transport/storage -25°C to +65°C

Permissible relative humidity

..... up to 95%, no condensation

Power supply

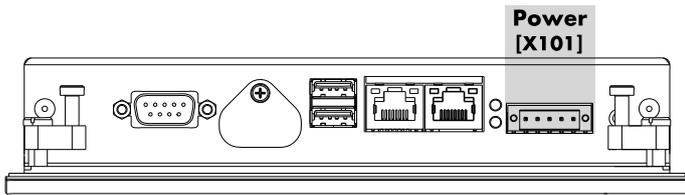
Supply voltage 24 VDC
 Power consumption 12 W (max.)

Dimensions and weight

Height x width x depth 150 x 200 x 40 mm (5.9" x 7.87" x 1.57")
 Built-in dimensions 141 x 191 mm (5.55" x 7.5")
 Weight 0.9 kg/1.98 lb

The hardware consists of a 7" touchscreen (800 x 480 pixel) IPC device based on the Beckhoff CP6606 Panel PC. It incorporates a 1 GHz 7AMR Cortex A8 CPU and provides a steel housing with aluminum front.

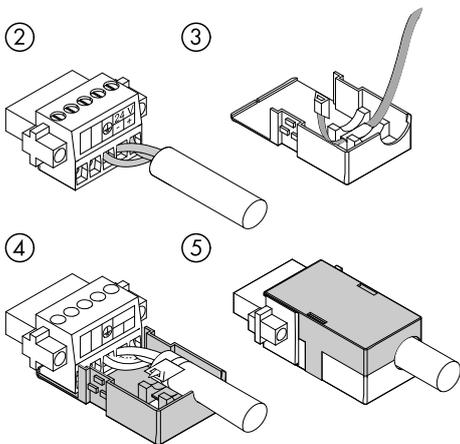
Note: For further information on how to install and start up the device, please refer to the corresponding Beckhoff manual, which can be downloaded from the download section of the Beckhoff website at www.beckhoff.com as well as from the related product page at www.dbaudio.com.



2.1 Power supply

To operate the R90, an external 24 VDC power supply capable of delivering a minimum of 12 W (500 mA) is required. To supply power to the device, use the power socket **[X101]**.

Pin	Signal
1 / 2	n.c.
3	⊖
4	GND
5	+ 24 V _{DC}

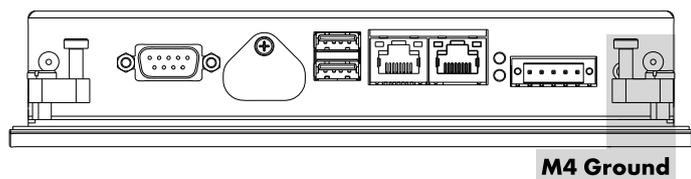
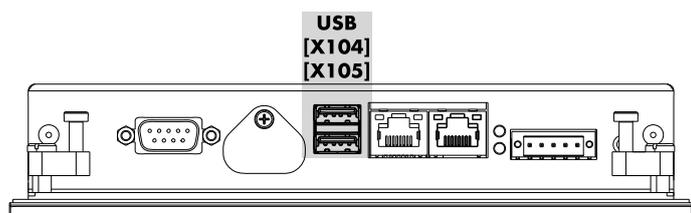
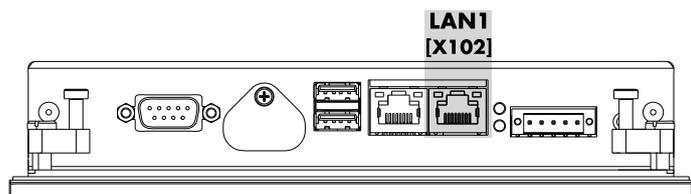


Fit the power supply cable

2.2 Fit the power supply cable

Tools required : Flat-head screwdriver 2 x 0.4 mm.

1. Strip insulation from the cable ends (length of stripped conductor is 8 - 9 mm).
2. Plug in the cable ends to the 5-pole plug connector in accordance with the previous wiring table.
3. Thread the cable tie into the lower part of the strain relief housing.
4. Place the plug connector into the lower part of the strain relief housing. Tighten the cable tie and cut off the remaining plastic strap.
5. Fix the upper part of the strain relief housing by snapping it onto the lower part.



2.3 LAN

To connect the device to the d&b Remote network, use the **LAN1** RJ45 connector socket (**[X102]** - 10/100BASE-T Local Area Network), as shown in the graphic opposite.

2.4 USB

Two USB 2.0 ports are provided (**[X104]/[X105]**) to allow either firmware updates via a USB stick (see also ⇒ R90 Software - Settings - System config ⇒ Firmware update on page 8) or to connect an external USB keyboard for data entry (see also ⇒ R90 Web Remote interface ⇒ Keyboard entries on page 14).

Note: Before installing the device in a wall, we recommend you to use appropriate USB extension cables to ensure better accessibility of the USB ports.

2.5 Ground connection

The device is grounded via the **[M4 Ground]** connection.

2.5.1 Earthing measures

Earthing connections bleed off interferences from external power supply cables, signal cables, or cables to peripheral equipment. Establish a low-resistance connection from the earthing point of the device housing (⇒ Ground connection) to the central earthing point onsite (e.g. the equipment cabinet, in which the device is installed).

2.6 Connecting cables

When connecting cables to the device, please observe the following order:

1. Disconnect all devices involved from their power supplies.
2. Connect all cables to the R90 and to the devices to be connected.
3. Ensure that all screw connections between connectors and sockets are tight.
4. Reconnect all devices to their power supplies.

3.1 Software Terms of Use

The software installed on the R90 shall only be used to the extent intended/documented. d&b shall not be liable for any damage resulting from any other or non-conforming use.

You may not decompile, copy, alter, or enhance the software installed on the R90 or its source code in any form. d&b will investigate any infringement of copyright or intellectual property rights.

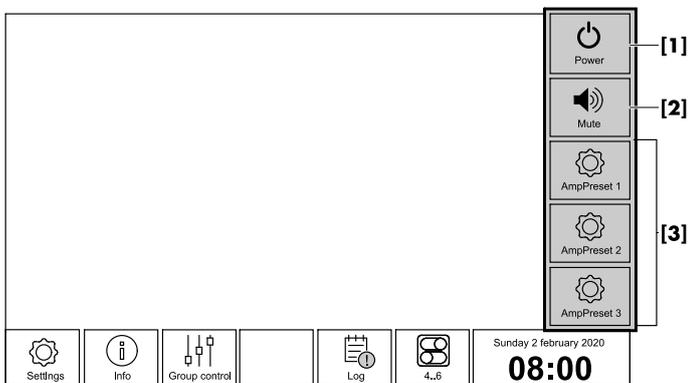
3.2 Interface

The display interface of the R90 can be used in two different ways:

- manually using the 7" touchscreen
 - via web remote control
- For more information about the web remote control, please refer to ⇒ Chapter 4 "R90 Web Remote interface" on page 14.

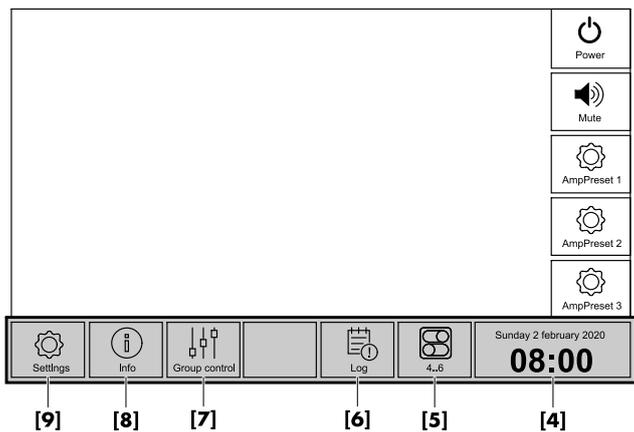
Quick tab

- [1] Power**
Main power switch.
- [2] Mute**
Master mute function.
- [3] AmpPresets**
Recall AmpPresets from the amplifier(s).



Menu bar

- [4] Time and date**
- [5] Preset switch**
Three presets out of a maximum of nine presets can be displayed at once. The preset switch is activated as soon as a project includes more than three presets. In this case, all presets are displayed successively in the «Quick tab» bar in groups of a maximum of three.
- [6] Log**
System and amplifier log messages.
- [7] Group control**
Fader and mute controls.
- [8] Info**
Copyright and current software version.
- [9] Settings**
Project setup and system configuration.



Password

User name:

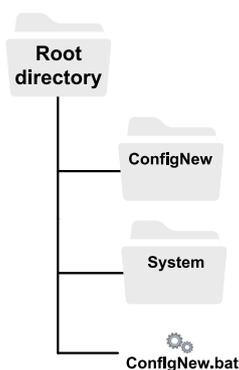
Password: **View**

Static

IP address:

Subnet mask:

Set static IP address



3.3 Settings

3.3.1 Login

Once the device has booted, selecting «Settings» on the bottom right of the touchscreen opens the R90 login screen.

By factory default, the login data is:

User name: Admin

Password: Admin
Select and hold the «View» button to show the entered password for verification.

If you are inactive for more than 15 minutes, you will be logged out automatically. A new login is required.

To change your system configuration, navigate to "«Settings» ⇒ «System config»".

To change your project settings, navigate to "«Settings» ⇒ «Project setup»".

3.3.2 System configuration

Network settings

Navigate to Settings ⇒ System config ⇒ Network settings.

You can set your IP address manually («Static») or obtain it automatically via DHCP.

To set your IP address manually, please proceed as follows:

1. Check the «Static» option.
2. Enter your IP address and subnet mask.
3. Select «Apply»
 - ↳ The device restarts automatically.

Firmware update

A new firmware can be loaded and installed via the USB ports of the device. The folder with the new unzipped firmware package must be stored in the root directory of the USB drive.

To update your firmware, please proceed as follows:

1. Download the latest firmware from www.dbaudio.com.
2. Extract the *.zip file into the root directory of your USB stick.
3. Insert your USB drive to one of the USB ports of the device (**[X104]** or **[X105]**).
4. Navigate to Settings ⇒ System config ⇒ Firmware update.
5. Select «Copy firmware package».
 - ↳ The system will reboot automatically and install the new firmware.
6. Remove the USB drive.

User name:

New password: **View**

Confirm new password:

Change password

Change password

Navigate to «Settings» ⇒ «System config» ⇒ «Password».

To change your password, please proceed as follows:

1. Enter your user name.
2. Enter the new password.
 - ↳ Select and hold the «View» button to show the entered password for verification.
3. Confirm your new password.
4. Select «Save» to apply your new password.

Lock screen and energy-saving mode

Navigate to «Settings» ⇒ «System config» ⇒ «Lock screen»

To protect the application from unauthorized access or to prevent accidental modifications, two different locking options are available:

- Manual locking
- Auto-locking

Once the screen is locked, either manually or automatically, all controls on the user interface become read-only after a specified number of minutes.

Manual locking

To activate the manual locking, proceed as follows:

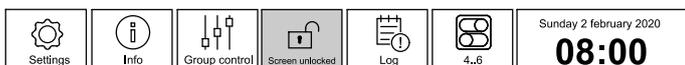
1. Make a tick on the «Screen locking» option.
 - ↳ The manual locking option is now activated.
2. Navigate to the home screen.
3. Select the «Screen unlocked» button.
 - ↳ The screen is now locked, no touchscreen input is possible. The icon on the button changes from an unlocked to a locked padlock.

Screen locking

Automatically lock screen after minutes

PIN: **View**
Enter new PIN to change old

Screen locking settings "Manual locking"



4. To unlock the screen, select the «Screen locked» button.
 - ↳ The button icon changes to an unlocked padlock.

Auto-locking

To activate auto-locking, proceed as follows:

1. Make a tick on the «Screen locking» and «Automatically lock screen» options.
 - ↳ The automatically lock screen option is now activated.
2. Set the time after which the screen should become inactive.
3. **Optional:** Make a tick on the «PIN» option and enter your PIN (one to eight numbers).
 - ↳ If the PIN input field is left empty, the PIN function is disabled.

To see the PIN in plain text, select and hold the «View» button.

Screen locking

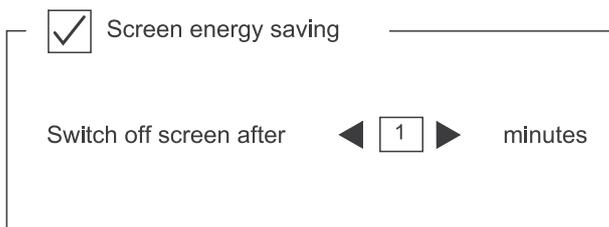
Automatically lock screen after minutes

PIN: **View**
Enter new PIN to change old

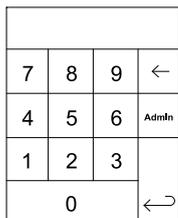
Screen locking settings "Auto-locking"



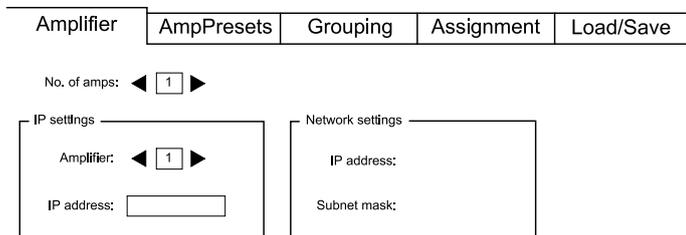
4. To unlock the screen, select the «Screen locked» button.
 - ↳ If no PIN is set, the button icon changes to an unlocked padlock and the screen is unlocked. Otherwise the number pad appears to enter the PIN.



Settings Screen energy saving



Bypassing lockscreen



Amplifier setup

Screen energy saving

To activate the energy-saving mode, proceed as follows:

1. Select the «Screen energy saving» option.
 - ↳ The «Screen energy saving» option is now activated.
2. Set the time after which the screen is switched off.
3. To deactivate the screen energy saving mode, touch anywhere on the screen. The screen turns back on.

Bypass lock screen (admin)

To bypass the lock screen, proceed as follows:

1. On the home screen, select the «Screen locked» button.
 - ↳ The number pad is shown.
2. Select the «Admin» button.
 - ↳ The normal login screen is shown.
3. Enter your user name and password.
4. Select «Enter».
 - ↳ If the login is successful, the screen is unlocked automatically.

3.3.3 Project setup

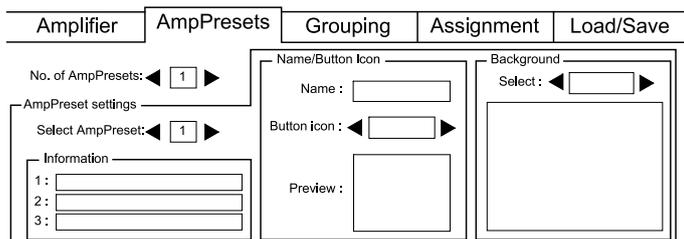
Amplifier

On the «Amplifier» tab, you can set the number of amplifiers and assign an IP address to each device.

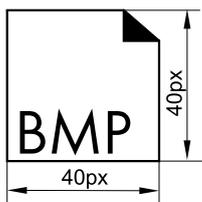
To add an amplifier and set its IP address, please proceed as follows:

1. Select the left or right arrow next to «No. of amps» to set the required number of amplifiers according to your project.
2. In the box «IP settings», select an amplifier.
3. Enter the assigned IP address of your amplifier into the «IP address» field.
4. Select «Apply» to save your settings.

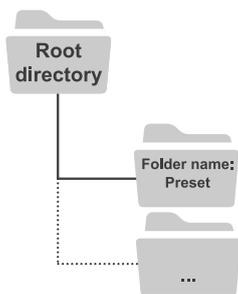
Note: In the «Network settings» box, the actual IP settings of your R90, which were entered in System config ⇒ «Network settings», are displayed.



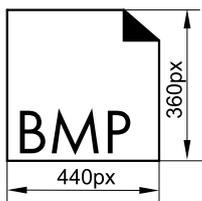
AmpPreset setup



Dimensions preset icon



Folder structure



Dimensions background picture

AmpPresets

Before presets can be set on the R90, they must first be created in R1 or on the amplifier. For more information about creating AmpPresets, see the amplifier manual which can be downloaded from the related product page at www.dbaudio.com.

On the «AmpPresets» tab, you can set the number of presets, assign a name, set predefined or individual buttons, or backgrounds. In the information box, you can save related data, e.g. location or zone information that belongs to the preset.

To set presets, please proceed as follows:

1. Set the total number of presets in the «No. of AmpPresets» field.
2. Select a preset you want to define in the «Select AmpPreset» field.
3. Add additional information for the preset, e.g. room or area name.
4. Select a predefined button and background. If you want to add an individual icon and background, see details below.
5. Select «Apply» to save your settings.

Individual button icon

You need two files for every preset icon, for the ON and OFF states. These are stored in a folder on the USB drive named *Preset*. The icon files must be in bitmap (*.bmp) format, 40 x 40px, and must follow a certain naming convention:

	Preset 1	Preset 2	Preset n
File name "ON" state	Preset-On-1	Preset-On-2	Preset-On-n
File name "OFF" state	Preset-Off-1	Preset-Off-2	Preset-Off-n

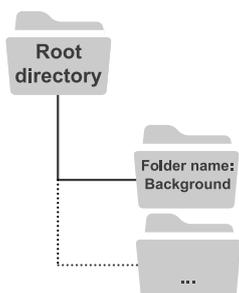
To set an individual button icon, please proceed as follows:

1. Select the right or left arrow in the «Name/Button icon» box until the message «Load preset from USB» appears.
2. Select «Load preset from USB».
 - ↳ The button icons on the USB drive are loaded automatically.
3. Select «Apply» to save your settings and remove the USB drive.

Individual background picture

You need one file for each picture. This is stored in a folder on the USB drive named *Background*. The background files must be in bitmap (*.bmp) format, 440 x 360px, and must follow a certain naming convention:

	Background 1	Background 2	Background n
Name	Background-1	Background-2	Background-n



Folder structure

Amplifier	AmpPresets	Grouping	Assignment	Load/Save
Group Select group: ◀ 1 ▶ Group name: <input type="text"/>		Amplifier selection Select amplifier: ◀ 1 ▶ <input type="checkbox"/> Activate all channels		Channels amplifier 1 <input checked="" type="checkbox"/> Channel A <input type="checkbox"/> Channel B <input checked="" type="checkbox"/> Channel C <input type="checkbox"/> Channel D

Assign amplifier channels to a group

Amplifier	AmpPresets	Grouping	Assignment	Load/Save
Faders No. of faders: ◀ 1 ▶ Select fader: ◀ 1 ▶ Select group: ◀ <input type="text"/> ▶ <input type="checkbox"/> Include mute		Mutes No. of mutes: ◀ 1 ▶ Select mute: ◀ 1 ▶ Select group: ◀ <input type="text"/> ▶		

Assign faders and mutes to a group

Amplifier	Presets	Grouping	Assignment	Load/Save
Load project Project: ◀ <input type="text"/> ▶ <input type="button" value="Load from USB"/>		Save project Project name: <input type="text"/> <input type="button" value="Save to USB"/>		
<small>NOTICE: Loading project will automaticall restart the system</small>				

Load and save a project

To set an individual background picture, please proceed as follows:

1. Select the right or left arrow in the «Background» box until the message «Load background from USB» appears.
2. Select «Load background from USB».
↳ The background pictures on the USB drive are loaded automatically.
3. Select «Apply» to save your settings and remove the USB drive.

Grouping

On the «Grouping» tab, amplifier channels can be combined in a group. Each group can be addressed and controlled individually using the «Group control» function on the home screen.

To assign amplifier channels to a group, please proceed as follows:

1. In the «Group» box, select a group.
2. Enter a «Group name».
3. In the «Amplifier selection», select an amplifier.
4. In the «Channels amplifier» box, select all required channels.
5. Select «Apply» to save your settings.

Assignment

On the «Assignment» tab, you can assign faders and mutes to a group. They can be displayed in the «Group control» window on the home screen.

To assign faders and mutes to a group, please proceed as follows:

1. Set the total number of faders and mutes required for your project in the «No. of faders» and «No. of mutes» fields.
2. Select a fader in the «Select fader» box and assign it to a previously created group.
Note: If you want to include a mute button in a control frame containing a fader, select the «Include mutes».
3. Select a mute option in the «Select mute» box and assign it to a previously created group.
4. Select «Apply» to save your settings.

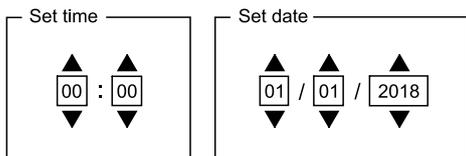
Load and save

On the «Load/Save» tab, you can load a previous project or save your current project to an external USB drive. The project is saved in a folder with your entered project name in the root folder of your USB drive. In addition to amplifier and AmpPreset configurations, saved projects include custom icons and background pictures.

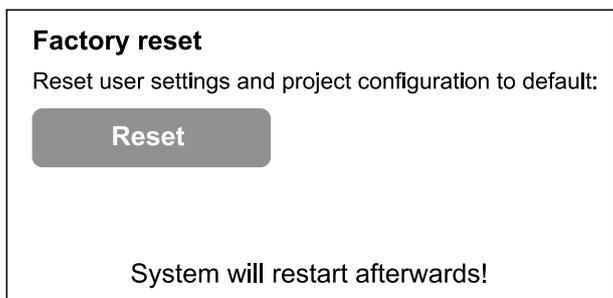
When loading a project, always ensure that its folder is located at the root level of the USB drive.

To load a project, proceed as follows:

1. Place the project folder in the root folder of your USB drive.
2. Plug in your USB drive to the R90.
3. Select «Scan»
↳ The «Load Project» dialog updates and lists all available projects..



Set time and date



Factory reset

4. Select your project.
5. Select «Load from USB».

To save a project, proceed as follows:

1. Enter your project name.
2. Select «Save to USB»
 - ↳ The project folder is written to the root folder of your USB drive.

3.4 System time and date

Navigate to «Home».

To set your local device time and date, please proceed as follows:

1. In the menu bar on the home screen, select and hold the clock for 2 seconds.
 - ↳ The «Time/Date» screen appears.
2. Set time and date correspondingly.
3. Select «Apply» to save your settings.

3.5 Factory reset

Navigate to «Home».

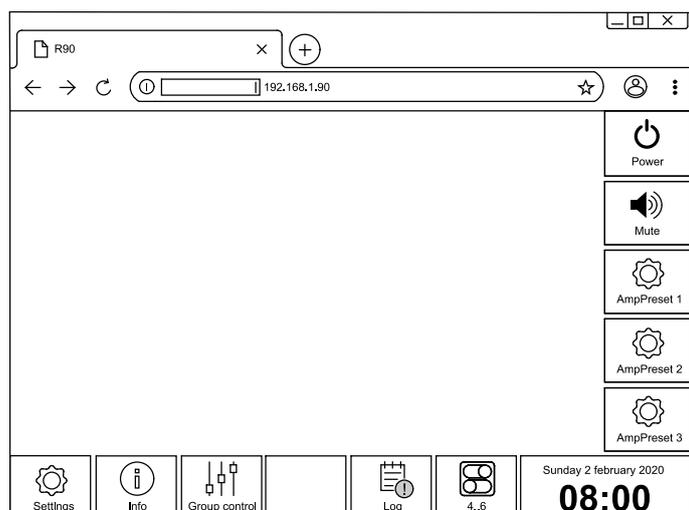
To reset the device, please proceed as follows:

1. In the menu bar on the home screen, select and hold the clock for 2 seconds.
 - ↳ The «Time/Date» screen appears.
2. Select and hold the button on the left next to the clock for another 5 seconds.



- ↳ The «Factory reset» screen appears.
3. Select «Reset» to reset user settings and project configurations to default.

Note: When you have selected one of the reset options, the system will restart automatically. After a full reset («Reset»), you can log in using the default login data.



R90 Web Remote interface

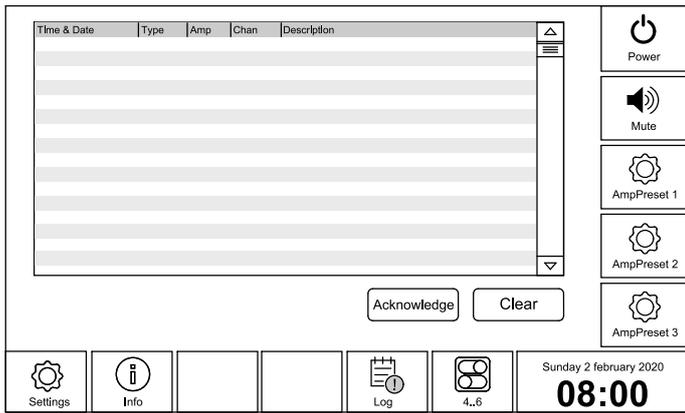
In addition, the R90 provides an integrated Web Remote interface which allows full access using a standard web browser.

Provided the IP settings of the R90 are set in System config ⇒ «Network settings», to access the R90 via web remote, please proceed as follows:

1. Enter the following URL into the address line of your browser:
http://LocalHost/
2. Instead of "LocalHost" enter the IP address of your R90.
Example: http://192.168.1.90

Keyboard entries

Entries may also be made using a USB keyboard. However, depending on the behavior of the browser or its settings, some characters may not be accepted or may change the focus. Therefore, we recommend you to use the mouse on the onscreen input masks and the onscreen keyboard of the R90 screen.



The log window displays two different types of information:

- System messages, triggered by R90.
- Amp messages, triggered by connected amplifiers.

When a new system or amp message appears, a red circle with an exclamation mark is added to the log button on the menu bar. Select the «Log» button to access the log window.

Select «Acknowledge» to confirm that you have read the messages. Or select «Clear» to delete all log entries irrevocably.

System messages

Message	Description
No IP address	No IP address has been defined in the system configuration.
Connection lost	An already established connection to an amplifier is lost. Check the cable and the power supply.
No connection	No amplifier with the specified address has been found.
Connection established	The connection to an amplifier has been established successfully.
Duplicate IP for amp "AmpNumber"	The same IP has been assigned for two or more amplifiers.

