Operating Instructions

Instabus Audio Actuator, 4-gang
0531 00

GIRA

System information

This device is a product of the Instabus EIB system and complies with the EIBA guidelines. Detailed specialist knowledge gained in Instabus training courses is required to understand this material.
The operation of the device is software-dependent. Detailed information on which software can be loaded, which range of functions results and the software itself is contained in the manufacturer's product database.
The device is planned, installed and commissioned using an EIBA-certified software.
You'll always find the current product database and the technical descriptions on the Internet at www.gira.de.

Danger warnings

Important! Electrical devices may only be installed and mounted by a qualified electrician. When doing so, the applicable accident prevention regulations must be observed.
To avoid an electric shock, isolate the device before working on it (switch off circuit breaker).
Failure to observe the installation instructions can result in damage to the device, fire or other dangers.

Device description

The 4-gang audio actuator is used to control an audio system in interaction with other EIB devices. A high-quality, flexible audio multiroom system can be realised with additional components like the 8-gang preamplifier and the 10/4 DC output amplifiers.
The device should not be viewed as an amplifier. The manufacturer must always be consulted if special loads are used.

The 4-gang audio actuator offers the following functions:

Sound control

All 4 audio outputs can be controlled in the bass and treble ranges, and with a connectable midrange filter.

Audio matrix

Mono: 8 audio inputs can be assigned 4 audio outputs.

Stereo: 4 audio inputs can be assigned 2 audio outputs.

Volume control

4 DC 0-10 V control outputs enable the volume control of power amplifiers with a DC control input, like the 10/4 DC output amplifier. And several amplifiers can be controlled at the same time.

24 V DC control output

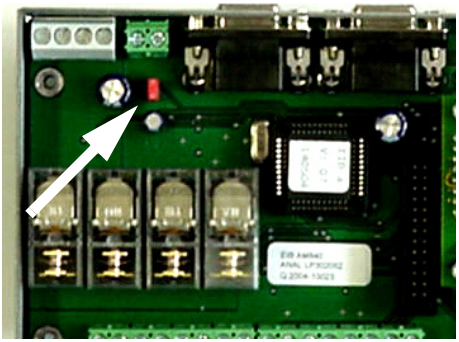
4 DC power control outputs permit the power supply of amplifiers with 24 V DC supply voltage, e.g. the 10/4 DC output amplifier. They can be switched independently of each other.

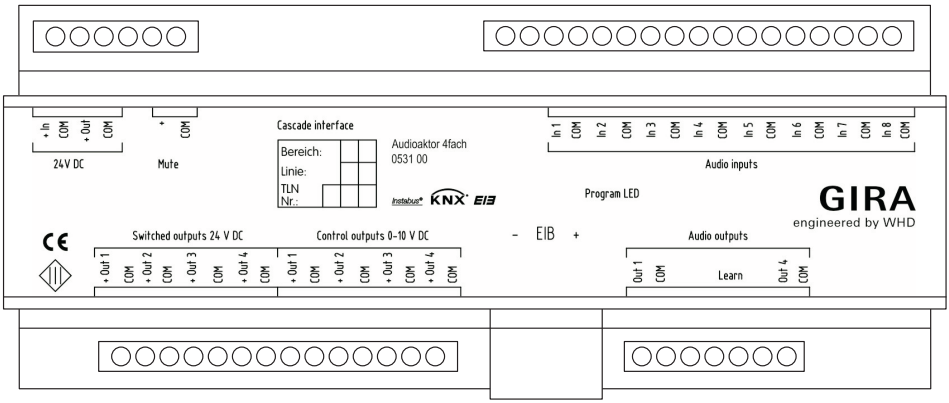
Mute

A mute input enables the simultaneous muting of all audio outputs.

Remove jumper

If the mute input is used, the jumper on the PCB must be removed.
To do this, the housing cover must be unscrewed beforehand.





24 V DC + In / + Out / COM

Power supply for the audio actuator. The 4-gang audio actuator is equipped with 2 connections each for 24 V DC, which can be used for looping through (max. 16 A).

Mute + / COM

This input can be connected to the "Mute/ Audioaktor" output of the 8-gang preamplifier. If this input is switched, the relay inputs (switched outputs) Out1 - Out4 are deactivated.

Cascade interface

Sub D interfaces for connecting additional audio actuators. The audio actuator can be connected to additional audio actuators with a 9-pin sub D cable.

Audio inputs In1 - In8 / COM

Audio inputs for the audio signal from the 8-gang preamplifier. The maximum input voltage is 5 V AC.

Switched outputs 24 V DC Out1-Out4 / COM

Relay output for switching the connected output amplifier on and off (maximum switching capacity is 10 A).

Control outputs 0-10 V DC Out1-Out4 / COM

Relay output for the amplifier setting of the connected output amplifier.

EIB

Connection to the EIB

Audio outputs Out1 - Out4 / COM

Audio output for connection to the respective output amplifier.

Installation

The device is designed for mounting on a top-hat rail. The space requirement is approx. 12 m.c.b. units (12 HP).

The respectively applicable national erection regulations and the requirements according to the "Manual of Building System Technology" must be observed.

In addition, we also recommend the installation of overvoltage devices according to the EMC lightning protection zone concept IEC 1024-1.

Connection assignment

The 4-gang audio actuator is equipped with 2 connections each for 24 V DC, which can be used for looping through.

The audio actuator can be connected to additional audio actuators with a 9-pin sub D cable.

Connected load

It must be ensured that the maximum total current of 16 A or 10 A per zone is not exceeded.

Short circuit and overload

Polarity reversal protection of the input voltage 24 V. Audio outputs are briefly short-circuit-proof.

Permissible back-up fusing

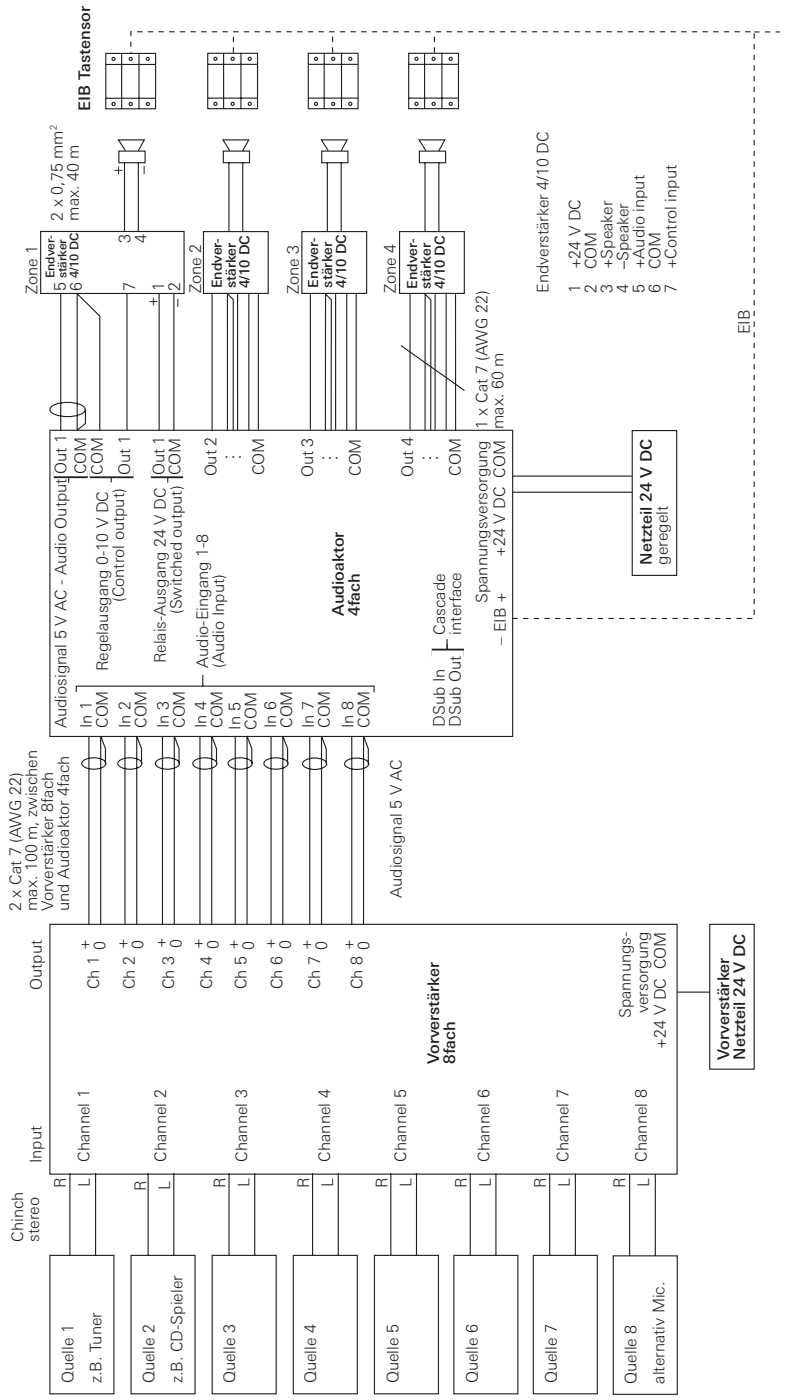
The device may be fused with a maximum of one 16 A circuit breaker, characteristic B.

Note

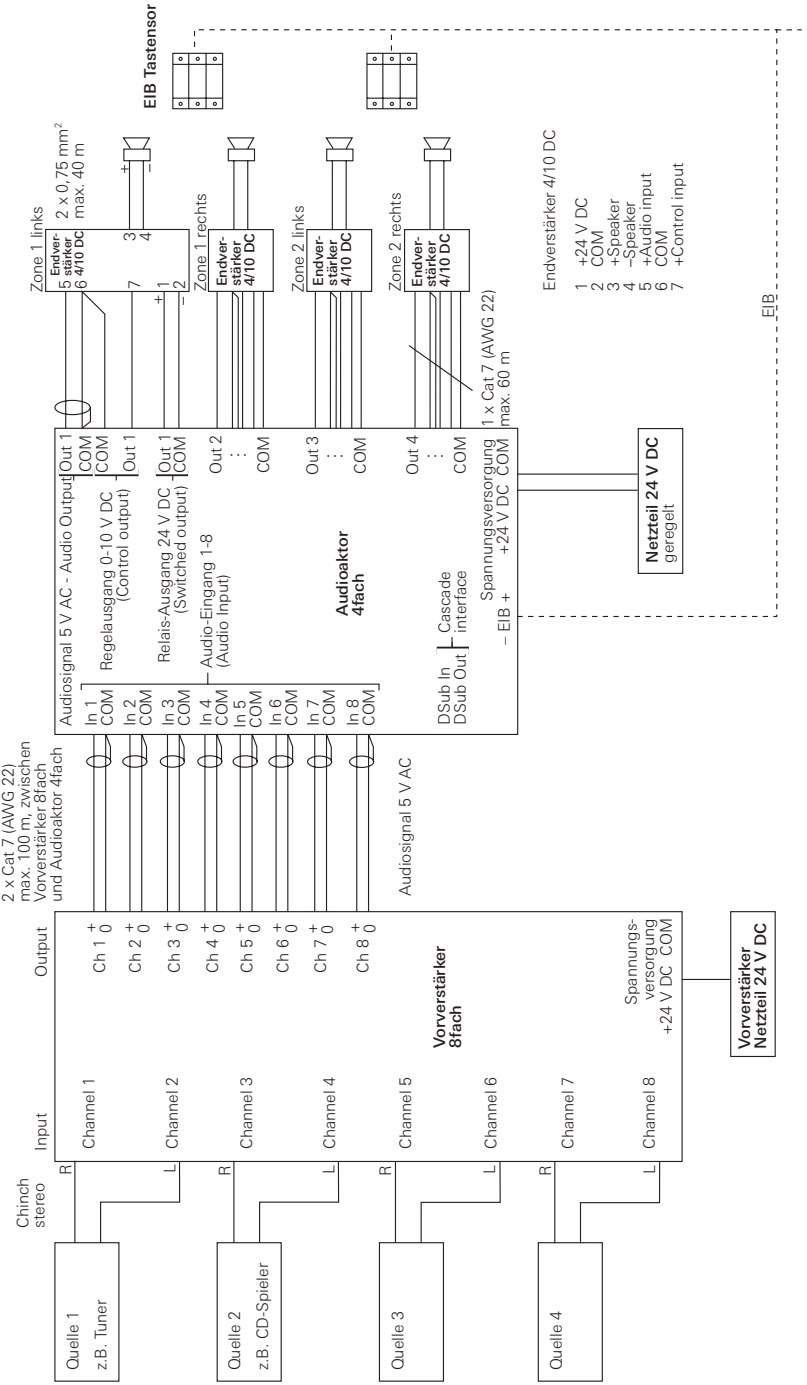
The maximum current loading of the contacts results in the maximum amplifier connection figures.

Loudspeaker impedance	4 Ω	8 Ω	20 Ω
Max. number of amplifiers total	20	40	88
Max. number of amplifiers per zone (mono)	12	24	55

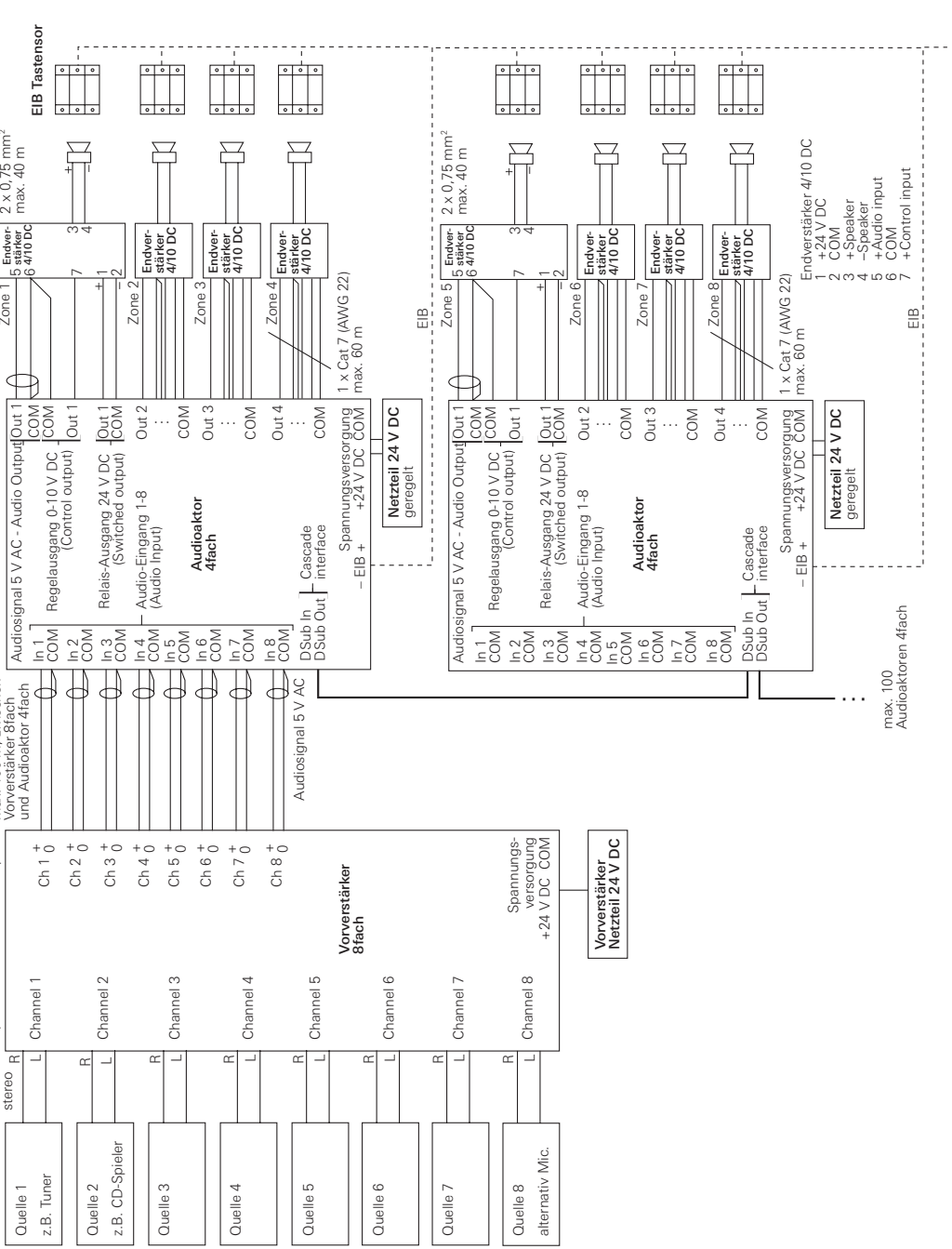
Mono wiring example



Stereo wiring example



Cascading wiring example



Cable from the sound sources to the 8-gang preamplifier

Cinch cable (stereo), max. length 3 m

The left + right output of the sound source is connected to the left and right input of a channel of the 8-gang preamplifier. Both inputs are combined in the 8-gang preamplifier to form a mono signal and are then available at the respective output of the channel.

In stereo mode, the left output of the sound source must be connected to channel 1 of the 8-gang preamplifier and the right output of the sound source to channel 2 of the 8-gang preamplifier. As a result, a stereo signal is available at output 1 and 2.

Cable from 8-gang preamplifier to 4-gang audio actuator

2 x CAT 7 (AWG 22) cable, max. length 100 m

To prevent crosstalk, not only CAT 7, but also any cable shielded in pairs can be used.

Cable from 4-gang audio actuator to 10/4 DC output amplifier:

1 x CAT 7 (AWG 22) cable, max. length 60 m

For longer cable lengths we recommend not transmitting the operating voltage of the amplifier via the CAT 7 cable, but instead via a cable with a larger cross section (max. 1.5 mm²). The cable length is dependent on the desired maximum output power of the amplifier (normal 10 W/4 Ω) if the power supply of the amplifier is provided via the CAT 7 cable.

With star-shaped wiring,
(per 2 leads in parallel):
an approx. 15 % loss applies for 35 m,
and approx. 35 % loss for 70 m.

If the amplifiers are looped through, the loss becomes greater with each additional amplifier. In this case, an additional cable with a larger cross section is recommended for the power supply.

When using several 10/4 DC output amplifiers on one master cable, it is recommended that branch terminals be used, as with the 10/4 DC output amplifier no loop-through terminals are available.

Cable from 10/4 DC output amplifier to the loudspeaker

Loudspeaker cable with double sheath
2 x 0.75 mm², maximum length 40 m with a loudspeaker impedance of 4 Ω.

Due to possible mechanical loading, no twin flexible lead should be used.

The parallel connection of loudspeakers is only possible with limitations due to the space requirements in the box and terminals.

A maximum of 2 x 0.8 mm² are possible per single terminal (fixed wire/single-wire).

Cascading 4-gang audio actuator

If more than 4 mono (or 2 stereo) zones are required, several audio actuators can be cascaded.

To loop through the inputs, the 4-gang audio actuator has sub D sockets via which additional audio actuators can be connected with a connection cable. As a result, it is not necessary to wire each individual input to the other audio actuators by hand.

A suitable sub D connection cable with a length of 0.5 m is available as an option.

Installation recommendation

Install the components 4-gang audio actuator and 10/4 DC output amplifier in a distribution board (flush-mounted or surface-mounted).

This has the advantage that all devices can be wired within the distribution board and inputs and outputs can be routed to corresponding terminals.

Dimensioning of power supply unit

We recommend a stabilised, short-circuit-proof switched mode power supply. To generate higher currents, several power supply units switchable in parallel can be used.

Gira offers two different power supply units for mounting on a top-hat rail for the EIB audio system:

- 24 V DC/5 A
- 24 V DC/10 A (pay attention to design)

The power supply unit is dimensioned based on the current consumption of the individual devices:

Current consumption of 4-gang audio actuator:	0.2 A
Current consumption of 10/4 DC output amplifier:	0.8 A

Example:

System for 4 rooms (mono) consisting of

1x 4-gang audio actuator = 0.2 A

4x 10/4 DC output amplifier = 4 * 0.8 A = 3.2 A

Total: 3.4 A

A power supply unit with at least 3.4 A must be used, e.g. 24 V DC/5 A power supply unit.

Technical Data

Operating voltage:	24 V DC
Audio input voltage:	5 V AC
Audio output voltage:	5 V AC
Mute voltage:	Threshold voltage 5 V DC
Control voltage:	0 - 10 VDC
Power consumption:	4 W + number of output amplifiers x 19 W
Power consumption in standby:	1.5 W
Maximum input current:	16 A
Maximum current load-ability of relay contacts:	10 A per zone
Input impedance:	100 kΩ
Output impedance:	50 Ω
Frequency response (-1.5 dB):	30 to 20,000 Hz
Total harmonic distortion:	< 0.1%
Control range for sound control:	+/- 14 dB
Midrange filter:	- 4 dB at 3 kHz
Developed based on:	EN 55103-1
Protection class:	III
Operating temperature:	+5 °C to +45 °C
Storage and transport temperature:	-25 °C to +70 °C
Housing material:	Metal
Housing colour:	Silver RAL 9006
Dimensions:	208 x 88 x 60 mm approx. 12 HP
Weight:	0.7 kg
Mounting:	DIN top-hat rail

Warranty

We provide a warranty in accordance with the statutory requirements.

Please send the device postage paid with an error description to our central customer service centre.

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