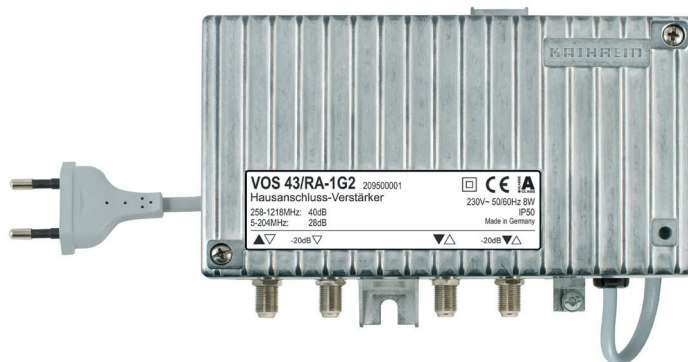


## House connection amplifier

### Merkmale

- House connection amplifier for modern HFC networks up to 1,2 GHz
- Integrated high-efficiency switched-mode power supply unit
- Power management: Unused amplifier stage switch-off for reduced power consumption
- Die-cast housing with F-type connectors
- Variable 6 dB interstage gain setting using on-board plug-in attenuators (delivery condition: higher gain)
- The maximum operational levels also apply for operation with interstage attenuation
- Interstage equaliser switchable with bridging plugs (6 dB pre-emphasis)
- Integrated return path 5 – 204 MHz active/passive, off (switchable with bridging plugs)
- Built-in variable attenuators (delivery condition return path: max. attenuation) and variable equaliser
- LED to indicate operational mode
- Test socket on output -20 dB (with directional coupler)
- Test socket on input -20 dB (Return path 5 – 204 MHz)
- Test sockets are terminated with the EMK 03 in the delivery status
- For indoor installation
- Conform to: EN 60728-11, EN 50083-2 und EN 32368-1
- The amplifiers comply with the EMC directive 2014/30/EU and Low-Voltage Directive 2014/35/EU applicable at the time of shipping



### Basic safety precautions



- ▶ Installation must be carried out by authorised specialist staff.
- ▶ Unplug from the mains before installation.
- ▶ Described amplifiers are exclusively for installation of HFC networks up to 1218 MHz.
- ▶ Any other use or failure to comply with these instructions will void the warranty or guarantee.
- ▶ The amplifiers may only be installed in dry areas indoors. Do not install on or against highly combustible materials.
- ▶ The amplifiers must be earthed when installed (Cu, minimally 4 mm<sup>2</sup>).
- ▶ The safety regulations set out in the current EN 60728-11 und EN 62368-1 standards must be complied with.



- ▶ The supply voltage of the amplifiers is 230 V<sub>AC</sub> which can be fatal if touched directly!
- ▶ The only reliable method of disconnecting the amplifiers from the mains is to unplug them.
- ▶ Do not touch live parts.
- ▶ The power plug must be easy to operate as the means of cutting power to the amplifier, so the wall outlet must be close to the amplifier and easily accessible.
- ▶ The amplifiers may only be installed and deinstalled in the voltage-free condition.
- ▶ Do not operate the amplifiers without the factory-fitted protective cover over the power supply unit. The cover must be closed.
- ▶ No liquid-filled items may be placed on top of the amplifiers.
- ▶ The amplifiers are not to be exposed to dripping or splashing water.
- ▶ Ambient temperature range -20 bis +55 °C.

## Setting of the amplifier

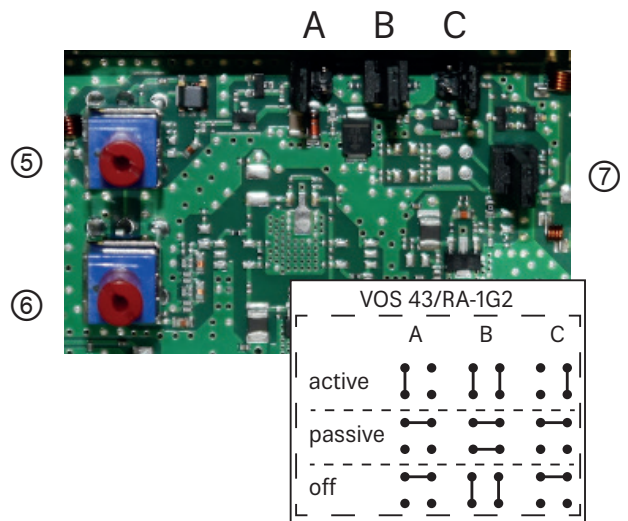
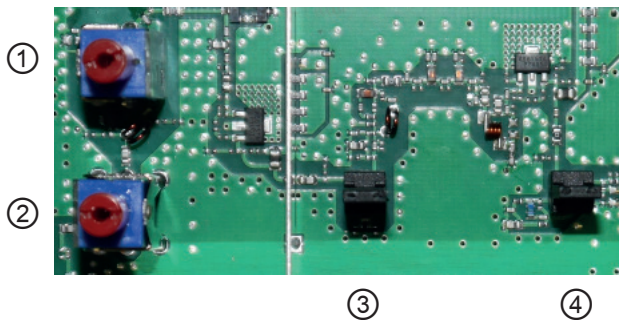
To adjust the settings, a Phillips screwdriver is required to remove the housing cover. The settings options are also imprinted on the housing cover.

### Forward path

- ① Pre-emphasis: 0 – 15 dB
- ② Attenuation: 0 – 20 dB
- ③ Interstage → Attenuation: 6 dB
- ④ Interstage → Pre-emphasis: 6 dB

### Return path

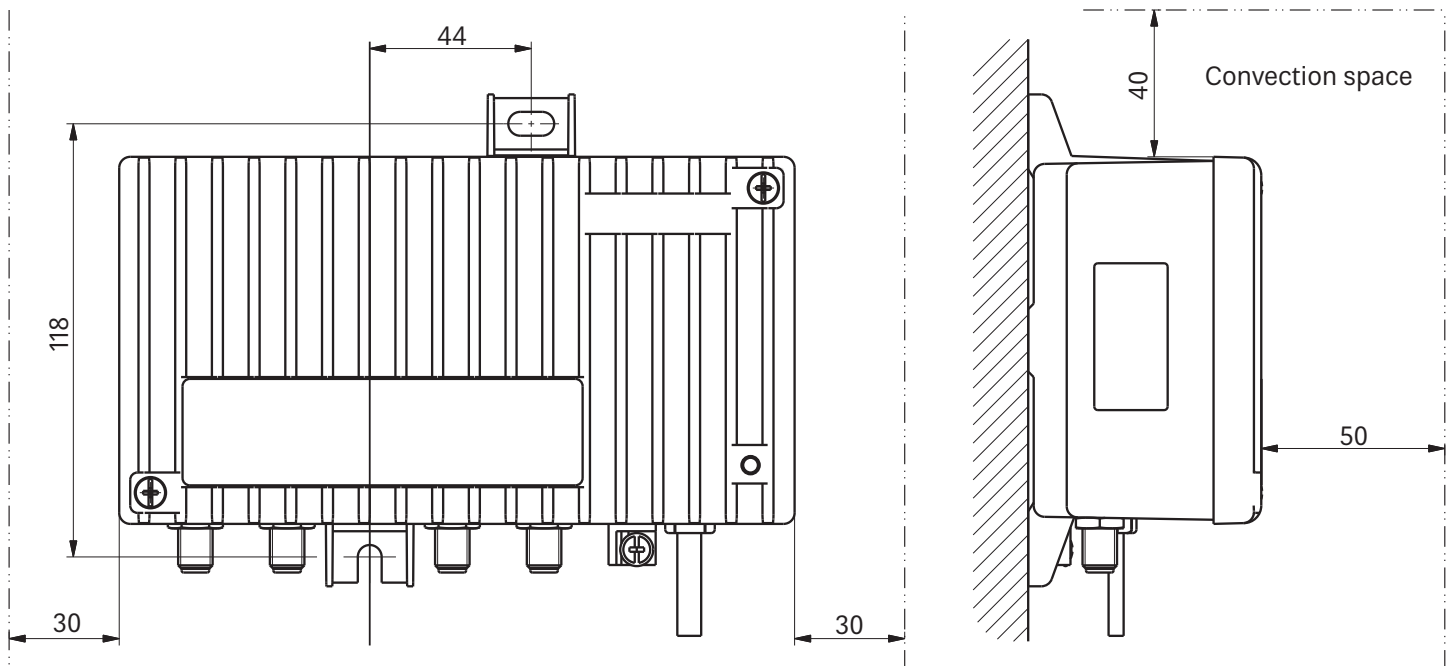
- ⑤ Pre-emphasis: 0 – 20 dB
- ⑥ Attenuation: 0 – 20 dB
- ⑦ Attenuation: 0 dB | 10 dB
- A | B | C: Operation mode return path: (see graphic and block diagram)



## Optionally available accessories

- De-emphasis equaliser: ERZ 120 (Order no. 272791)
- Lightning arrester: KAZ 12 (Order no. 21810002)

## Mounting



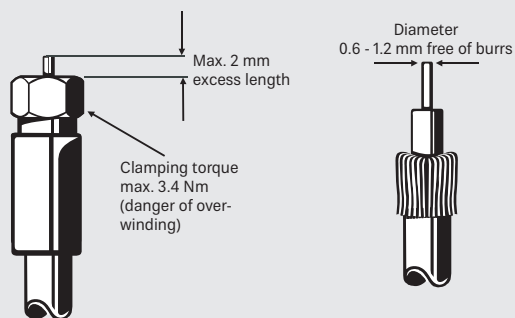
The following is required for installation:

- Fixings: screws, max.  $\varnothing$  4.5 mm
- F-type connector plug as per EN 61169-24

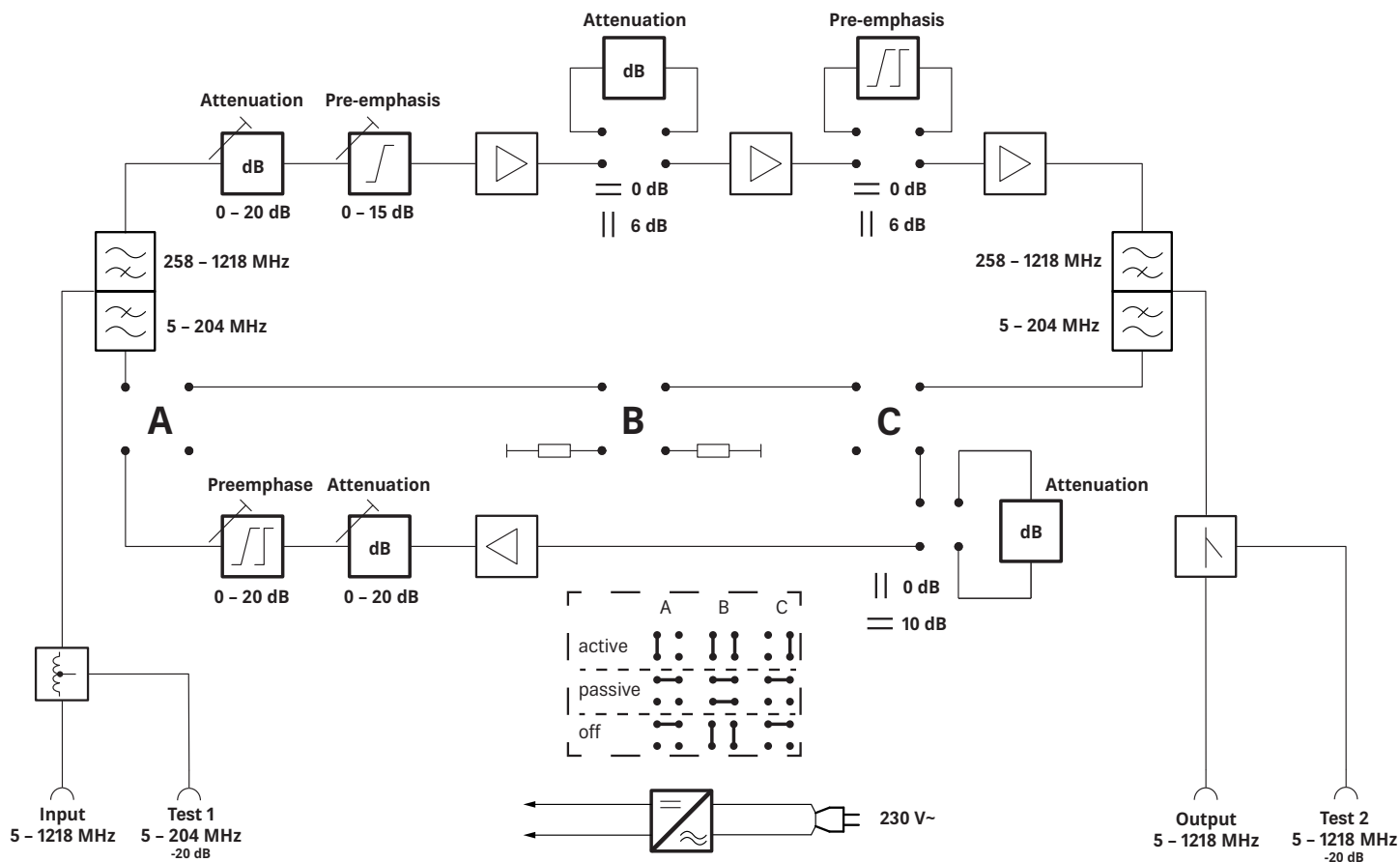


### Risk of damage to property!

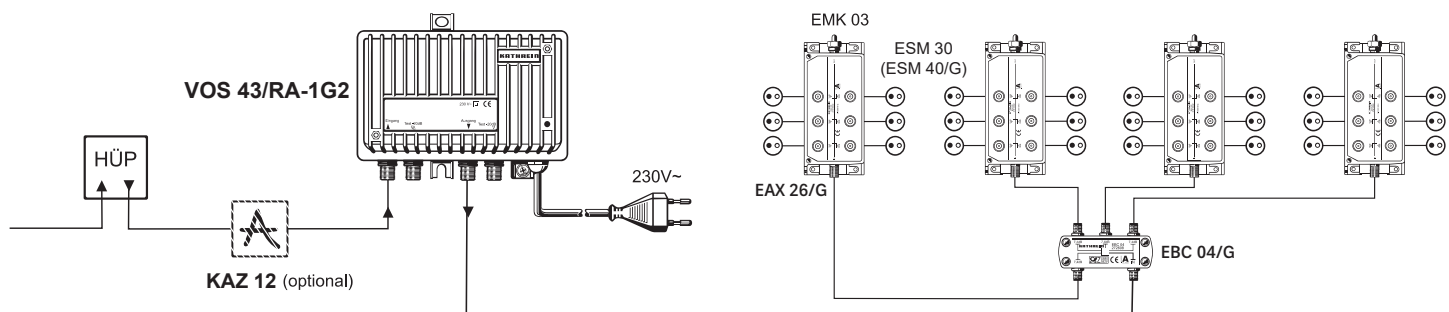
An inner cable conductor with a diameter greater than 1.2 mm, or the presence of burrs may damage the device inputs/outputs beyond repair.



## Block diagram



## Connection example



## Technical data

Type   Order no.		VOS 43/RA-1G2   209500001
<b>Forward path</b>		
Frequency range	MHz	258 – 1218
Gain (variable through interstage gain)	dB	34   40
Amplitude deviation	dB	± 1   ± 1,5
Setting range variable attenuator	dB	0 – 20
Setting range equaliser	dB	0 – 15
Setting range interstage attenuation (switchable with bridging plug)	dB	0   6
Setting range interstage equaliser (switchable with bridging plug)	dB	0   6
Max. operating level <sup>1)</sup> (60-dB-CTB/CSO) flat	dBμV	108   114
with interstage pre-emphasis		110   116
Max. operating level <sup>2)</sup> (BER <1E-9) flat	dBμV	103
with interstage pre-emphasis		105
Noise figure (interstage attenuation 0/6 dB)	dB	5   6
Number of outputs		1
<b>Return path</b>		
Frequency range	MHz	5 – 204
Gain (switchable passive/active)	dB	-1/28, can be disconnected
Setting range attenuation on amplifier input (switchable with bridging plug)	dB	0   10
Setting range variable attenuator (amplifier output)	dB	0 – 20
Setting range equaliser (amplifier output)	dB	0 – 20
Noise figure	dB	5
Input level density (CINR: 50 dB)	dBμV/Hz	-11
Dynamic range (input level density)	dB	21
Max. operating level (BER <1E-9) 24 channels QAM 256	dBμV	106
<b>General</b>		
Impedance input/output	Ω	75
Return loss input/output Forward path <sup>3)</sup> Return path	dB	18 20
RF connections		F-type connector
Test socket output with directional coupler (5 – 1218 MHz)	dB	-20
Test socket output return path (5 – 204 MHz)	dB	-20
Nominal input voltage	V <sub>AC</sub>	230 (50/60 Hz)
Power consumption (without/with return path)	W	6/8
Operational display		Green LED
Protection class/protection category (to EN 60529)		II/IP 50
Temperature range	°C	-20 bis +55
Dimensions	mm	184 x 134 x 63
Packing unit/weight	pc./kg	1 (10)/1,7

All data are typical values!

<sup>1)</sup> To EN 60728-3; CENELEC channel plan 34 carriers; the level values also apply for interstage attenuation

<sup>2)</sup> To EN 60728-3 119 channels 256 QAM

<sup>3)</sup> To EN 60728-3 (category B); from 40 MHz ≥ 18 dB -1.5 dB/octave



### Electronic equipment

Electronic equipment is not domestic waste – in accordance with directive 2012/19/EU OF THE EUROPEAN PARLIAMENT AND THE COUNCIL dated 4th July 2012 concerning used electrical and electronic appliances, it must be disposed of properly. At the end of its service life, take this unit for disposal at a designated public collection point.