

# CD 24 Digital System Controller

- Digital system controller with 24 bit resolution and 96 kHz sampling rate
- 118 dB dynamic range
- Sense-controlled RMS and peak limiters
- 2 in 4-way, 4 free configurable filters ('PEQ'), RS232 interface

The K&F CD 24 is a digital 2 in 4-way system controller for the configuration of almost all Kling & Freitag speaker systems with the highest possible operating safety because of sense-controlled limiter functions. The device is equipped with analogue signal inputs, remote interface via RS232, and sense inputs for the connected power amplifiers.

By using state-of-the-art AD and DA converters and 3 integrated signal processors (DSP), the K&F CD 24 offers the highest audio quality as well as a multitude of distinctive features and novel functions with a minimal system propagation delay of 0.5 milliseconds.

For every Kling & Freitag speaker system, there are specific parameters available in the form of 'LSBlocks' that can be assigned to each of the 4 output channels.

Often-used combinations of routings and 'LSBlocks' can be saved together with further parameters (Gain / Delay / 'PEQ') in up to 64 setups. As a special feature, the K&F CD 24 enables the generation of a mono sum signal of the two input channels. This sum signal is then assigned to the outputs 3 and 4 and can be used with an individual 'LSBlock' for each output.

Two limiters work in each of the 4 output channels. A quick-reacting peak limiter limits the peak levels and, thus, the cone excursion of the connected speakers to non-critical levels. A slowly engaging RMS limiter reduces the levels when the permissible average power is exceeded, therefore keeping the voice coils from overheating. In the K&F CD 24, these limiters work especially quickly, exactly, and sound-neutral because of the algorithms used. In this process, the sense technology developed by Kling & Freitag, which controls the limiters in real time, significantly increases the operating safety of the connected speakers.

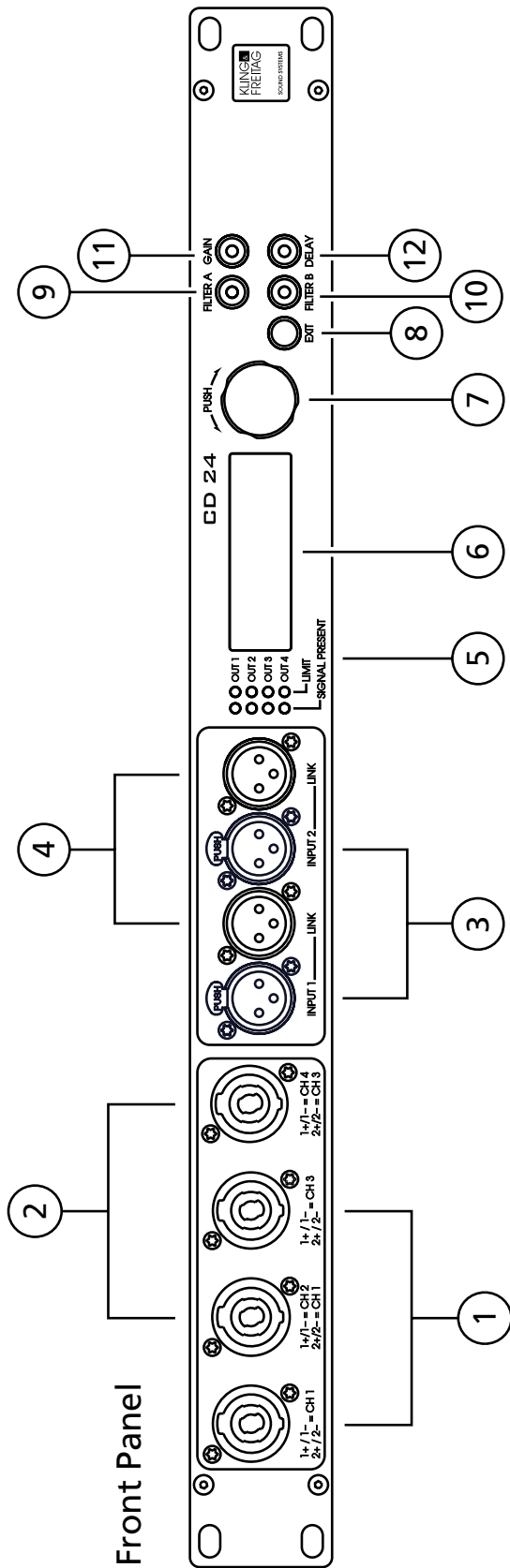
A further feature of the K&F CD 24 is the function 'Limiter Reduction', that allows for the preset limiter thresholds to be systematically reduced. This, for example, lets the user precisely limit the sound level of the speakers to the desired levels with password protection.

All functions are operated and set on the front-side LCD display using a digital rotary encoder. Often-used functions (GAIN, DELAY, FILTER, PEQ) can be quickly accessed using the shortcut buttons. For mobile use, the system controller has all of its speaker and line signal connectors on the front. The large voltage range of the switch mode power supply enables the worldwide use of the K&F CD 24.

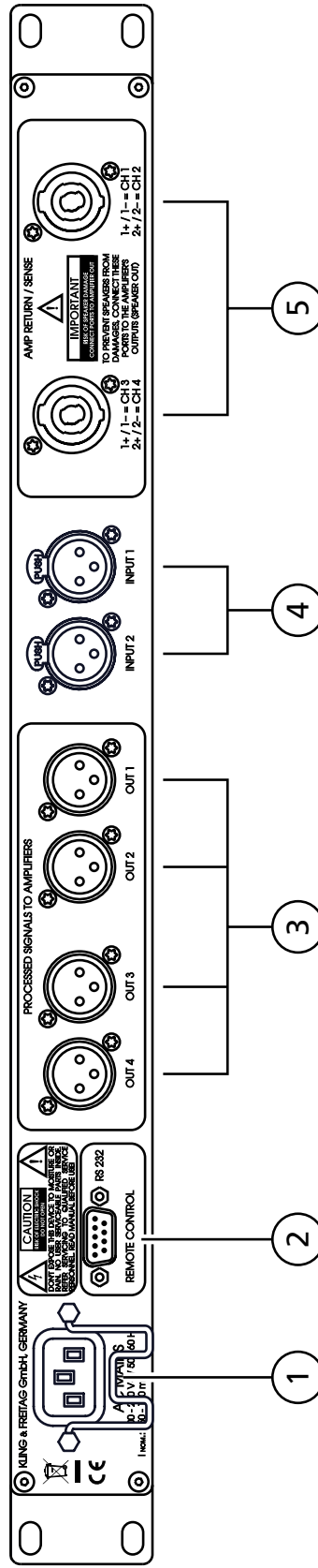


<b>Input Signal Processing</b>	
Filters	4 selectable filters (Bell, LShelv, HShelv, HighP, LowP, AP)
Gain	digital gain control +20 dB to -96 dB
<b>Output Signal Processing</b>	
Output delay	40 ms total (2 x 20 ms) with 10 µs resolution,
Filters	12 filters in the speaker specific K&F LS blocks
Limit	RMS and peak limiter in the speaker specific K&F LS blocks
Gain	digital gain control +20 dB to -96 dB
<b>Sense Inputs</b>	
Maximum input level	150 Vrms
Gain determination	20 dB to 45 dB
<b>Analog-to-Digital Inputs</b>	
Input impedance	10 kΩ balanced, 10 kΩ unbalanced, electronically balanced
Nominal input level	+6 dBu
Maximum input level	+18 dBu
Frequency response	+0/-0.2 dB, 2 Hz to 20 kHz
THD + noise	0.0008 % (-102 dB) typical @ 1 kHz/-1dBfs
Dynamic range	118 dB typical, A-weighted
CMRR	65 dB, 20 Hz to 20 kHz, 75 dB typical @ 1 kHz, 70 dB typical @ 20 kHz
<b>Digital-to-Analog Outputs</b>	
Output impedance	<40 Ω, electronically balanced
Nominal output level	+6 dBu
Maximum output level	+18 dBu
Frequency response	+0/-0.2 dB, 2 Hz to 20 kHz
THD + noise	0.0008 % (-102 dB) typical @ 1 kHz/-1 dBfs
Dynamic range	119 dB typical, 20 Hz to 20 kHz, A-weighted @ +18 dBu
<b>Analog-In to Analog-Out</b>	
Frequency response	20 Hz to 20 kHz ±0.1dB
Dynamic range	115 dB typical, 20 Hz to 20 kHz, unweighted
THD + noise	0.001 % (-100dB) typical @ 1 kHz / +17 dBu (all gains zero)
	0.0014 % (-97 dB) typical @ 1 kHz / +6 dBu (all gains zero)
Conversion resolution	24 Bit
Internal sample rate	96 kHz
Internal data path	28 bit integer, arithmetic precision: 76 bit
System propagation delay	0.5ms (analogue to analogue)
<b>Remote Interface</b>	
	RS232
<b>Power Requirements</b>	
AC	100 - 240 V~ / 50 - 60 Hz
Inom.	150 - 100 mA
<b>Dimensions and Weight</b>	
Dimensions (W x H x D*)	1 RU rack mount: 483 x 44 x 192 mm (19" x 1.75" x 7.6")
	*installation depth incl. power cord 260 mm (10.236")
Weight	1.7 kg (3.75 lb)

# CD 24 Digital System Controller



**Front Panel**



**Rear Panel**

**Front Panel**

- 1 Speaker connectors CH 1 and CH 3
- 2 Speaker connectors CH 1 / CH 2 and CH 3 / CH 4
- 3 Signal input connectors INPUT 1 through INPUT 2
- 4 Signal output connectors LINK 1 and LINK 2
- 5 SIGNAL PRESENT, LIMIT
- 6 Display
- 7 Knob
- 8 EXIT Button
- 9 FILTER A Button
- 10 FILTER B Button
- 11 GAIN Button
- 12 DELAY Button

**Rear Panel**

- 1 Power Supply Connector
- 2 REMOTE CONTROL
- 3 OUT 1 through OUT 4
- 4 Signal input connectors INPUT 1 through INPUT 2
- 5 AMP RETURN / SENSE