Klippel Analyzer 3 H3

Hardware Device for the KLIPPEL ANALYZER SYSTEM (Revision 1.7)

FEATURES

- Modular concept for customized applications and sustainability
- 48/96/192 kHz sampling rate
- Audio interface with up to 16 channels in each direction
- General purpose in/outputs (GPIO) for simple interfacing
- Updatable firmware for future extension card support
- Integrated health monitoring for all cards

BENEFITS

- Unified measurement platform for R&D and QC
- Environmental interactions through GPIO port

DESCRIPTION

The Klippel Analyzer 3 is the hardware platform for the R&D and QC modules that performs the data acquisition and real time processing. It is connected to the Host-PC / dB-Lab via USB 2.0. In standard configuration the hardware hosts a Laser-, Speaker- and XLR-Card, which are all using 24 bit audio format up to 192 kHz. It also features a general purpose I/O connector at the back to support third-party equipment as well as simple environment interfacing.

Due to its modular design, the platform offers great sustainability and flexibility to make it fit best to special and future measurement applications.

Article number	2000-300

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1 Overview

1.1 Principle

The KA3 is a modular device, composed of a KA3-frame and cards. The frame offers six slots for cards to plug in. The cards contain different connectors and processing capabilities to allow for certain data acquisition or software modules. Using this concept, it is possible to extend the functionality over time and needs as well as simplify repair and / or calibration.

The LSX variant of KA3 is equipped with a Laser-, Speaker- and XLR-Card. (see Figure 1)

Extending or changing the KA3 composition is possible on request only!

1.2 KA3-Frame

The basic KA3-frame is a 19” 2U device. It is powered by an external power supply of 24 VDC nominal and is connected to the measurement PC via USB. It also provides a 25 pin GPIO Port for basic I/O operations.

1.3 LSX Configuration

Laser-Card	Unbalanced I/O-Card containing 1x BNC output, 2x LEMO input with 24 VDC supply, 2x BNC input IEPE powered
Speaker-Card	Contains 2x SpeakON speaker channel, 1x SpeakON Amplifier input
XLR-Card	Balanced I/O-Card containing 2x XLR output, 2x XLR input Phantom powered

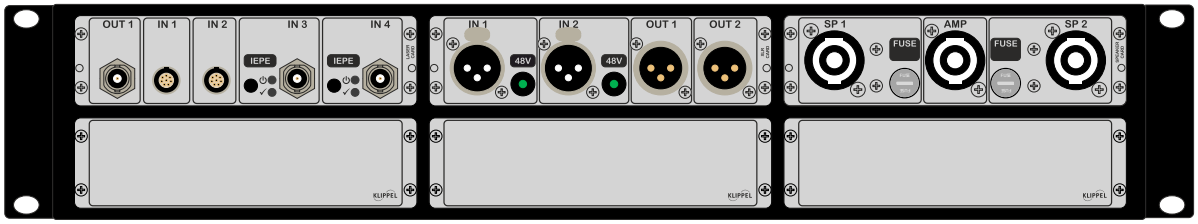


Figure 1: KA3 front in LSX configuration

2 General Purpose IO connector (D-Sub)

Electrical Specification

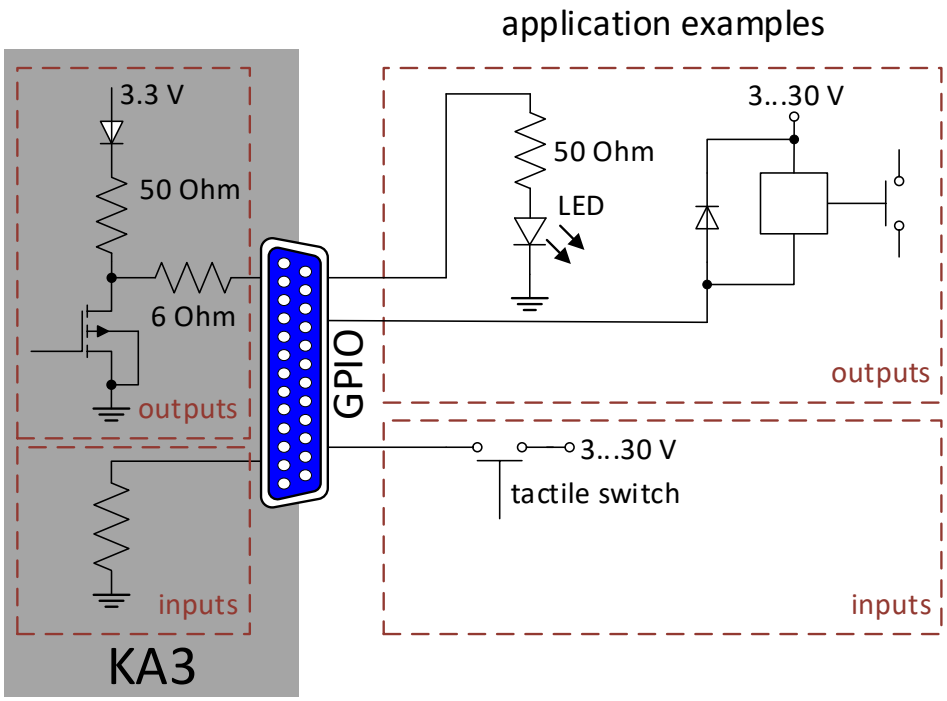
Parameter	Condition	Min	Typ.	Max	Unit
Inputs & Outputs Output behaviour changes from regular sourcing/sinking circuitry to a pure open drain output at 3 V output level.					
Output Low Voltage	*sinking 100 mA*		0.45	0.8	V
Output High Voltage	*sourcing 6 mA*	2.4			V
	open drain mode	3		30[1]	
Input High Voltage [2]		2.2		28	V
Input Low Voltage				1	V
Input impedance	*to GND*	9		12	kOhm
Voltage Range (non-destructive, infinite time)	*any I/O-Pin, except VCC&GND*	-30		30	V
	Reserved Pins (No 12+23)	-23		30	
Auxiliary Power Supply					
Supply Voltage			5		V
Supply Current			0.35	0.5	A
Supply source resistance			2		Ohm
Short-circuit Duration			infinite		s

[1] For KA3 revision 1.1, this value is limited to 6 V

[2] For KA3 revision 1.1, typical threshold for these devices is at 2.8 V but 5.2 V have to be applied to guarantee high level reading.

Simplified Schematic

Following diagram shows a simplified schematic of the internals of the KA3 for inputs and outputs as well as some examples to use these pins.



3 Operating Conditions

Parameter	Symbol	Min	Typ.	Max	Unit
Power supply voltage	V_{AC}	100		240	V
Power AC-frequency	f_{AC}	50		60	Hz
Operating ambient temperature	T_A	0	25	60[4)]	°C
Relative Humidity	*RH*		40	90[3)]	%
Input power	*P*		15	100	W

3) non-condensing conditions
4) external power supply is limited to 50°C ambient

Primary power supply connection with protective earth conductor is required!

Power supply connection with removed earth contact could cause high voltages at the enclosure of the device.

Warning: Custom equipped Klippel Analyzer 3 devices may require more restrictive environmental conditions due to thermal limitations.

Dimensions	486 mm x 280 mm x 88 mm 19”/2U (19.1 in x 11 in x 3.5 in)
Weight (LSX version)	4.8 kg (10.5 lb)
EMC	IEC 61326-1:2013
Safety	(EN 61010-1:2010)

Find explanations for symbols at:
http://www.klippel.de/know-how/literature.html
Last updated: April 22, 2024