



## BENEFITS

- software and user controlled phantom power
- balanced inputs support longer cables at higher noise immunity
- SNR can be optimized with multiple gain-stages

## FEATURES

- balanced high performance inputs and outputs
- up to 87 kHz bandwidth
- high CMRR inputs
- phantom power supply integrated
- superb noise and distortion characteristics
- selectable 6/29 V<sub>PP</sub> output range

## DESCRIPTION

The XLR-Card is a hardware extension for the Klippel Analyzer 3 to interface analog Line signals. It features high precision DAC and ADC components and signal conditioning. A built in 48 V Phantom-Power Supply allows the use of XLR-Microphones without any additional hardware.

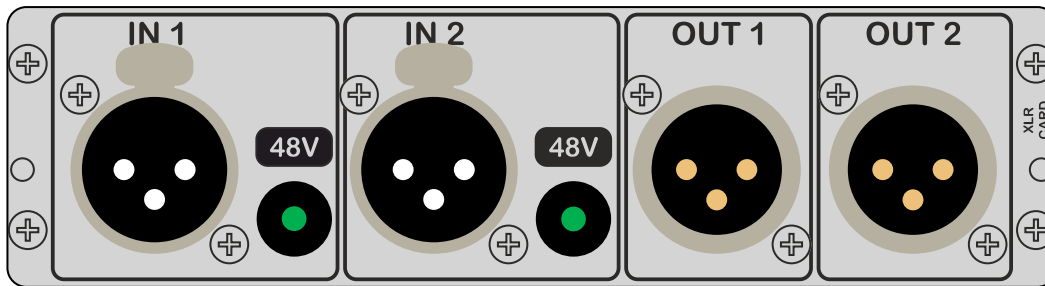
Article number

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## 1 Introduction



XLR-Card

Elements	Comment
<b>IN 1 / 2</b>	The XLR input connectors IN 1 and IN 2 provide a balanced line input. Phantom power can be activated by switch or dB-Lab. The green LED indicates phantom power status.
<b>OUT 1 / 2</b>	The XLR output connectors OUT 1 and OUT 2 provide a balanced analog output signal at pin 2 (hot/+), pin 3 (cold/-) and pin 1 (ground). If asymmetric output is required use pin 2 (hot/+) and short pin 3 (cold/-) with pin 1 (ground).

## 2 Specification

### 2.1 Maximum Ratings

Parameter	Conditions	Max	Unit
Input voltage, any pin		50	V
Input current (DC), any pin		20	mA
Transient input current, any pin	t < 1 ms	6	A

### 2.2 Electrical Specification

XLR Outputs					
Parameter	Conditions	Min	Typ	Max	Unit
Accuracy	1 kHz, 1 V <sub>rms</sub>		±0.05	±0.2	%
Differential output voltage	High-Range setup	TBD	14		V <sub>peak</sub>
	Low-Range setup	TBD	2.1		V <sub>peak</sub>
Common-Mode-Range <sup>2</sup>			±13		V
Differential Offset Voltage (absolute)	w Offset-Compensation		100	TBD	µV
	w/o Offset-Compensation		10	TBD	mV
Differential output impedance			30	TBD	Ohm
Shortcircuit duration			infinite		s
Output noise	BW = 20 kHz		7	TBD	µV <sub>rms</sub>
THD @ 1kHz	All Sample-Rates, HiRange, -1 dBfs		-107	TBD	dB
Lower Frequency limit (-3 dB)	Offset compensation active		1	TBD	Hz

XLR Inputs					
Parameter	Conditions	Min	Typ	Max	Unit
Phantom Power Voltage	Open input		48		V
Phantom Power Source Resistance			6.8		kOhm
Accuracy	1 kHz, 1 V <sub>rms</sub>		±0.05	±0.2	%
Common-Mode-Range <sup>2</sup>			±14		V <sub>peak</sub>
Sensitivity range (gain-controlled) <sup>1</sup>	Input voltage for 0 dBFs	0.06		21	V <sub>peak</sub>
Noise level (@ nom sensitivity)	Shorted input, BW = 20 kHz		3.5		μV <sub>rms</sub>
Nominal sensitivity (0 dB)	Input voltage for 0 dBFs		3		V <sub>peak</sub>
Dynamic Range	Sinewave		115	TBD	dB
THD @ 1 kHz	All Sample-Rates, -1 dBFs		-100	TBD	dB
CMRR	0 R mismatch, @50 Hz		80	TBD	dB
	10 R mismatch, @50 Hz		80	TBD	
	1 kOhm mismatch, @50 Hz		75	TBD	
Input impedance			10		kOhm
Input capacitance			15	TBD	pF
Lower Frequency limit (-3dB)	AC-coupling enabled		3	TBD	Hz
Upper Frequency limit	Fs = 48 kHz, +/-0.2 dB		20		kHz
	Fs = 96 kHz, +/-0.2 dB		35		
	Fs = 192 kHz, +/-0.2 dB		75		
	Fs = 192 kHz, +0/-1.5 dB		87		

<sup>1</sup> Gain control is limited to certain values defined by software module

<sup>2</sup> Pin voltage (common mode + signal) has to be below 14.3 V absolute to avoid clipping

Find explanations for symbols at:

<http://www.klippel.de/know-how/literature.html>

Last updated: November 30, 2017

