

Digital Processor Unit of the KLIPPEL R&D SYSTEM for enhanced power testing

FEATURES

- Special hardware for power testing
- Eight channel speaker monitoring
- Voltage and current measurement
- Sampling rate up to 96 kHz
- Stand-alone operation
- Computer-controlled operation
- Automatic firmware update
- Fast, hot plug USB interface
- Large internal memory for long term tests
- 19" / 2U rack mountable



Power Monitor 8 is a special hardware platform for the long term testing of up to 8 speakers simultaneously. The hardware hosts a high performance digital signal processor for demanding calculations and accurate 24 Bit AD/DA converters with a sampling frequency up to 96 kHz. The Power Monitor 8 can be operated as a stand-alone unit by using the key pad and the display. Connecting a computer via USB-interface the computer software dB-Lab and several measurement modules can be used to control the unit and visualize the results. In addition to the 8 channel speaker monitoring the hardware provides a two channel line (XLR) in- and output.

A low current version with higher sensitivity is available on request.

Article Number: 2000-101

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Front

Display	Alphanumeric LCD display (Back-lighted)
←, →, ↑, ↓	Arrow keys for cursor navigation (left, right, up and down)
ENTER	Key for starting an operation, confirming data, or going to a sub menu
ESC	Key for quitting a sub menu and loading the upper menu level
RED KEY	Key to stop the current measurement
USB	Connector to USB port of Windows compatible PC or hub. If a computer is connected to the USB port at the front side, the USB port at the rear side is disabled.
Power Switch	Main power switch (switch off/on, hardware reset)

Rear



Power	Input from Switching Mode Power Supply
USB	USB connector for an upstream connection to the PC. If both USB ports are connected to a PC, the front side USB connection has a higher priority and disables the rear USB port.
IN 1, 2	External analog input IN1 or IN2 can receive signals by using pin 2 and 3 for symmetric signals and pin 1 for ground. For supplying an asymmetric input signal to one of the signal pins the other input pin should be connected to ground.
OUT 1,2	The XLR output connector OUT 1 or OUT2 provides a symmetric analog output signal at pin 2 and 3 and ground at pin 1. If asymmetric output is required use one of pin 2 or 3 and let the other signal pin open. Do not short to ground.
Speaker 1..8	The SPEAKON® output connector SPEAKER 1..8 is to be connected to the terminals of the loudspeaker under test by using pins 1+ and 1- of the loudspeaker cable. The pins 2- and 2+ of the connector are used to sense the voltage at the loudspeaker terminals.
Amplifier 1,2 ... 7,8	The SPEAKON® input connector AMP is to be connected with a 2 channel output signal of the power amplifier. The signals supplied to pins 1- and 1+ will be provided to the Speaker 1, 3, 5 or 7. The signal at the pins 2- and 2+ provide the signal to the Speaker 2, 4, 6 or 8.

Recommended Operating Conditions

Parameter	Symbol	Min	Typ.	Max	Unit
Power Supply Voltage	V_{AC}	100		240	V
Power AC-Frequency	f_{AC}	47		63	Hz
Operating Ambient Temperature	T_A	0	25	50	°C
Input Power	P		10	50	W

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.

Electrical Characteristics

Parameter	Symbol	Min	Typ.	Max	Unit
Analog Line Inputs					
Input Voltage (peak, symm.) in PWT software attenuated to (symm.)	U_{in}	-10 -3.5		10 3.5	V V
Input Impedance	R_{in}		10		kΩ
Input Frequency Range	f_{in}	DC		48	kHz
THD+Noise (Sine) @ 1 kHz		96	100		dB
Input Crosstalk Attenuation		110			dB

Parameter	Symbol	Min	Typ.	Max	Unit
Analog Line Outputs					
Output Voltage (peak, symm.)	U_{out}	-9		9	V
Output Impedance	R_{out}	560	600		Ω
Output Frequency Range	f_{out}	DC		48	kHz
THD+Noise (Sine) @ 1 kHz		100	105		dB
Output Crosstalk Attenuation		110			dB
Speaker 1 – 8					
Current¹					
Current, peak (default, high, low) ¹	I_{peak}			50 / 50 / 15	A
Current, rms 10s max. (default, high, low) ¹	$I_{rms,10s}$			20 / 32 / 10	A
Current, rms (default, high, low) ¹	I_{rms}			8 / 20 / 8	A
Linearity				± 0.1	%
Frequency Response Range DC ... 10 kHz				0.2	dB
Frequency Response Range DC ... 40 kHz				1	dB
Serial Resistance (default, high, low) ¹				0.5 / 0.5 / 12	m Ω
Signal to Noise Ratio (full scale)		75			dB
Voltage					
Voltage, peak	U_{peak}			300	V
Frequency Response Range DC ... 10 kHz				0.2	dB
Frequency Response Range DC ... 40 kHz				1	dB
Signal to Noise Ratio (full scale)		75			dB
Note: ¹ special low / high current versions available on request					

General Specifications

Dimensions	483 mm x 300 mm x 88 mm (103 mm with feet) 19" / 2 Units
Weight	5 kg
EMC	IEC 61326:1997 + A1:1998 + A2:2000 (EN 61326:1997 + A1:1998 + A2:2001)
Safety	Follow safety instructions carefully: www.klippel.de/support/safety-first.html IEC 61010-1:2001 (EN 61010-1:2001)

Cable Set included

The PM8 hardware (Art.# 2000-101) comes with following cable set (included):

- 4 units: Amplifier cables: 1.5 meters; crimped ferrule (Art. # 2300-010)
- 8 units: 2.2 meters; Extended Temperature Range Speaker Cables (Article # 2300-025)
- 1 unit: Power supply with cable
- 1 unit: XLR Cable 1 meter
- 1 unit: USB cable

Other lengths or numbers provided on request.

Find explanations for symbols at <http://www.klippel.de/know-how/literature.html>

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