

LF-Millivoltmeter MV 100

digimess[®] compact

Order No.: H.UC 25-00



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The MV 100 millivoltmeter is the first-choice measuring instruments among LF technicians and electronic acoustics specialists in their daily work. With a frequency range of 5 Hz to 88 kHz, the MV 100 opens up a vast array of applications such as LF equipment measurements, sound analyses, e.g. on machines, as well as ultrasonic analyses. The MV 100 operates on a purely digital basis. Adjustable time constants and a bar graph that can be activated also permit the evaluation of critical signals with widely fluctuating levels, such as are typical for certain applications. Standard filter and special functions, e.g. psophometric filter, harmonic distortion or selective measurement, considerably extend the MV 100's range of applications thus creating, in conjunction with the TG 100 low-distortion generator, a complete LF analyser. Supplemented by the optional software package and extended to produce a fully automatic LF test bench, the MV 100 can be used for

even the most sophisticated tasks. As with all the instruments of the Grundig *digimess*[®] series, the MV 100 is controlled by a microprocessor, resulting in straightforward operation due to the "quattro key" operating concept, self-diagnosis and complete remote control and evaluation capabilities via the standard RS 232 C interface. The desired parameters, such as operating mode and filter centre frequencies can be set with the digital shaft encoder. The remote control option via the PC interface enables the MV 100 to be used in automatic test systems and thus satisfies the requirements for a modern LF measuring instrument. Two 16-digit alphanumeric LC display lines with background lighting provide constant information on all measuring and setting values. The excellent price-performance ratio means that the MV 100 finds wide application in development; production, service and training activities. The MV 100 is a must for every LF test bench!

Technical Data

General

Nominal temperature	+23 °C ± 2 °C
Operating temperature	+5 °C ... +40 °C
Relative humidity	80%
Atmospheric pressure	70 ... 106 kPa
Operating position	horizontal or inclined by ± 15°
Operating voltage	alternating voltage, 115/230 V (+10%, -15%), 47 ... 63 Hz
Power consumption	max. 15 VA (max. 15 W)
Fuses	T 63 L 250 V (230 V), T 125 L 250 V (115 V)
Safety class	II, according to DIN EN 61010-1 and IEC 536
Radio interference suppression	EN 55011 Class B, VDE 0871 Category B
Dimensions (in mm)	225 × 85 × 200 (L × H × D)
Weight of MV 100	approx. 1.5 kg
incl. packing and accessories	approx. 1.7 kg

Measurements

	Level wide band, non-weighted, weighted
	Level-selective, Noise and interference voltages
	Distortion factor THD+N, second harmonic distortion, third harmonic distortion
	Third octave analysis, user mode, frequency

Measuring input

Input resistance	non-balanced 1 MΩ // 25 pF
Input voltage range	max. 100 V _{rms}
Ranging	autoranging
Monitor output	0.5 ... 1.5 V _{pp} to Ri ~ 4700 Ω for oscilloscope

Specifications

Frequency ranges non-weighted	5 Hz ... 22 kHz and 5 Hz ... 88 kHz switchable
Frequency range weighted	5 Hz ... 22 kHz
Frequency response weighting	linear, acc. to CCIR 468-3 (DIN 45405 A-weighting) with third octave filter 125/160/200 Hz/.../12.5 kHz 48 dB/octave
Rectification	rms, peak, quasi-peak acc to CCIR 468-3 (DIN 45405)
Residual noise	< 10 μV (R _{source} < 1 kΩ, 5 Hz ... 22 kHz, non-weighted)

Level Display

Resolution	4 digit, dBu, dBV, V adjustable. Bargraph trend display add on.
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0.01 dB (0.2 dB for Trend display)

Measuring accuracy

Frequency response error	Basic error < 0.1 dB (f = 1 kHz/0 dBu)
Residual distortion factor	< 0.1 dB 20 Hz ... 22 kHz (typ. 0.05 dB) < 0.01% (typ. 0.003%)

Selective measurement

Frequency range	20 Hz ... 44 kHz
3 dB filter bandwidth	5 Hz (20 Hz ... 22 kHz), 10 Hz (20 Hz ... 44 kHz)
Reverse attenuation at ± 10 Hz	> 80 dB (20 Hz ... 22 kHz)
Rectification	rms
Residual noise	< 0.25 μV (source resistance < 1 kΩ)

Distortion measurement

Measuring frequency second harmonic distortion, third harmonic distortion	THD+N, second harmonic distortion, third harmonic distortion
Measuring frequency	30 Hz ... 11 kHz for second harmonic distortion, 30 Hz ... 7.65 kHz for third harmonic distortion
Attenuation of the fundamental	250 Hz, 500 Hz, 1 kHz, 2 kHz, 4 kHz, 8 kHz, 16 kHz
Display	notch filter 12. order, band reject attenuation > 90 dB in dB or %, linear and weighted

Individual weighting functions

	via software option via RS 232 interface loadable in user mode
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Display

Two-line alphanumerical LC display with 2 × 16-digits and background lighting. The display shows the level, frequency, units, decimal point as well as measuring functions and system signals.

Interface/Remote control

The MV 100 has full remote control/evaluation capability via the optoisolated RS 232 C interface with 1,200 to 9,600 Bd.