

Sine Wave Generator TG 100

digimess® compact

Order No.: H.UC 60-00



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The sine wave generator TG 100 is a new laboratory standard for LF measurements. Due to its low distortion factor TG 100 becomes an indispensable signal source for demanding applications in the LF field. GRUNDIG electronics have thus provided a direct link with their successful sound generators TG 40 and TG 41 which were sold on a large scale owing to their signal quality and moderate price. Now GRUNDIG electronics offering instead of them a digital synthesizer generator with a quartz-precision frequency adjustment and high spectral purity. Parameters such as: $\leq 0.02\%$ distortion factor in the frequency range of 10 Hz to 10 kHz speak for themselves. In addition to this we would like to draw your attention to the new operating comfort of our TG 100 which allows e.g. an adjustment of the output level direct into dBV, into dBm or as an effective value into mV or V by means of the digital rotary switch the burdensome converting becomes irrelevant because our TG 100 automatically takes care of this task! The disconnectible

rectangular output for the triggering of digital components is compatible to CMOS-logic rounds off the picture of the TG 100.

Like all instruments in the GRUNDIG electronics digimess® series TG 100 is microprocessor-controlled, which leads to simple operation due to the "quattro Key" operating concept, device self-diagnosis and complete remote control via standard RS-232 C interface.

The desired parameters such as frequency and signal amplitude can be adjusted by the digital rotary switch directly. The 16-digit alphanumeric LC display line with background illumination provides regular information on the measuring values and the settings. Due to its favourable price-/performance ratio this generator will be applied in many fields such as research, production, service and training.

Technical Data

General Technical Data

Nominal temperature	+23 °C ± 2 °C
Operating temperature	+5 ... +40 °C
Relative humidity	20 to 80%
Atmospheric pressure	70 to 106 kPa
Operating position	horizontal or inclined, with an incline of ± 15°
Operating voltage	sinusoidal alternating voltage (distortion factor < 5%) 115/230 V (+10%/–15%), internally switchable, 50 to 60 Hz (± 5%)
Power consumption	max. 15 VA
Fuses	T 50 L/250 V (230 V~), T 100 L/250 V (115 V~)
Safety class	I, according to DIN EN 61010 Part 1 (VDE 0411 Part 1), 3/94
Radio interference suppression	EN 55011 Class B, Vfg 1046/1984, VDE 0871 Category B
Dimensions (mm)	225 × 85 × 200 (W × H × D)
Weight:	
TG 100	approx. 1.9 kg
incl. packing and accessories	approx. 2.9 kg

General Specifications of Signal Outputs

Frequency range	1 Hz to 1 MHz
Frequency setting	4 digits
Setting accuracy of frequency	± 0.5% at nominal temperature ± 0.05% at nominal temperature and autocalibration
Duration of autocalibration of the frequency	approx. 100 ms for frequencies $f > 100$ Hz, approx. 0.1 s to 15 s for frequencies $f < 100$ Hz
Temperature coefficient of frequency	$< \pm 5 \cdot 10^{-4}$
Time coefficient of frequency	$< \pm 1 \cdot 10^{-3}/5$ min after 30 min warm-up time
Output signal	sine, rectangle (disconnectible)
Warm-up time	30 min

Sinusoidal-Output

Harmonic distortion of the output signal	$\leq 0.02\%$ for 10 Hz to 10 kHz $\leq 0.05\%$ for 10 kHz to 50 kHz $\leq 0.1\%$ for 50 kHz to 100 kHz $\leq 1\%$ for 100 kHz to 200 kHz $\leq 3\%$ for 200 kHz to 1 MHz
Output impedance	600 Ω ± 1.5%, asymmetric
Output voltage	3.16 V/600 Ω
Accuracy of output voltage	± 0.5 dB at 1 kHz
Temperature coefficient of output voltage	$< \pm 5 \cdot 10^{-3}/K$
Frequency response	± 0.5 dB for 20 Hz to 20 kHz, ± dB for 1 Hz to 1 MHz
Output voltage divider	0 dB to –70 dB in steps of 0.1 dB, tolerance ± 0.7 dB

Rectangular-Output

Output voltage	5 V ± 10% in idle speed, mark-to-space ratio abt. 1:1, CMOS compatible
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Display

Two-line alphanumeric LC display with 2 × 16 digits and background illumination showing frequency, level, units, decimal point as well as measuring functions and system information.

Interface/Remote Control

The TG 100 can be fully remote controlled via RS-232 C interface with 1,200 to 9,600 Bd.