

# Function Generator FG 100

**digimess® compact**

Order No.: H.UC 65-00



The function generator FG 100 is conceived as a "standard signal source" for daily laboratory use. The wide frequency range from 0.5 Hz to 20 MHz in connection with the signal forms offered and the special functions ensures that a further application field is covered. The internal sweep function allows a direct representation of transmitting curves on oscilloscopes or Y/T recorders. The precise digital frequency setting and the high frequency constancy, which is unusual in this price category, render this function generator interesting even for the most demanding applications. As a versatile signal source, the FG 100 will therefore soon be indispensable to every laboratory technician. Like all devices of the GRUNDIG **digimess®** series, the FG 100 has a microprocessor control system providing simple operation by means of the „quattro Key“

operating concept, as well as a self-diagnostics feature and complete remote controllability via the serial RS-232 C interface. The requested parameters such as frequency and signal amplitude are automatically set with the digital rotary switch. The remote controllability via PC interface allows the installation of the FG 100 into automatic test systems of various kinds. The FG 100 thus also fulfills the demands made by industrial companies. By means of the two 16-digit alphanumeric LC display lines with background illumination, you are always informed of all measured values and settings. Due to its excellent price/performance ratio this generator will find wide-spread application in design, production, service and training. This generator should be present in every measuring field.

## Technical Data

### General Features

Nominal temperature	+23 °C ± 2 °C
Operating temperature	+5 °C ... +40 °C
Relative humidity	80%
Air pressure	70 ... 106 kPa
Operating position	horizontal or inclined by ± 15°
Operating voltage	a.c. voltage, 115/230 V (+10%, -15%), 47 ... 63 Hz
Power requirement	max. 20 VA (max. 20 W)
Fuses	T 80 L 250 V (230 V), T 160 L 250 V (115 V)
Protection class	I acc. to DIN EN 61010 Part 1 (VDE 0411 Part 1), 3/94
Interference suppression	EN 55011 class B, Vfg. 1046/1984, VDE 0871 category B
Dimension (in mm)	225 × 85 × 200 (W × H × D)
Mass of FG 100, including packing and accessories	abt. 1.9 kg abt. 2.9 kg

### Specifications

Frequency range	0.5 Hz ... 20 MHz
Frequency setting	4 digits
Accuracy of the frequency setting (at nominal temperature)	± 0.5%, ± 0.05% after the automatic calibration for > 10 Hz
Duration of the auto-calibration of the frequency	abt. 0.8 s for f > 100 Hz, abt. 0.8 ... 30 s for f < 100 Hz
Temperature coefficient of the frequency	< ± 5 × 10 <sup>-4</sup> /K
Time coefficient of the frequency	< ± 1 × 10 <sup>-3</sup> /5 min after 30 min

### Signal Output

Output impedance	50 Ω ± 1.5%, unsymmetrical
Output voltage U <sub>SS</sub>	10 mV ... 10 V/50 Ω
Max. output level incl. offset voltage	$U_{SS} +  2 \cdot U_{offset}  \leq 10.00 \text{ V}$
Setting of the output voltage	3 digits
Accuracy of the output voltage f = 1 kHz	± 3%
Additional frequency error of the output voltage	± 5% in the range of 10 Hz ... 100 kHz ± 10% in the range of 0.5 Hz ... 20 MHz
Temperature coefficient of the output voltage	< ± 5 × 10 <sup>-3</sup> /K
d.c. voltage offset of the signal (U <sub>offset</sub> )	± 2.5 V/50 Ω, adjustment in 10 mV steps
Accuracy of the setting of the offset voltage	± (2% + 20 mV)
Output signal	sine, square, triangle, sawtooth
Nonlinear distortion factor of the sine signal	< 1% for 20 Hz ... 20 kHz, < 5% for 100 kHz ... 10 MHz
Rise time of the square signal	< 15 ns
Nonlinearity of the square signal (5 ... 95%)	< 1%
Adjustment of the pulse-duty factor	15 ... 85% for square and triangle 1% steps
Sweep	max. 1: 50, internal, digital, discrete
Sweep repetition interval	10 ms ... 60 s

### Synchronous Output

Output voltage U <sub>SS</sub>	5 V ± 10% at idling, pulse-duty factor abt. 1:1, CMOS compatible „Start“ pulse with a width of approx. 5 μs in the SWEEP operation
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### Display

Double-spaced alphanumeric LC display with 2 × 16 digits and background illumination. Frequency, level, units, decimal point as well as measuring functions and system messages.

### Interface/Remote Control

FG 100 is completely remote controllable via the RS-232 C interface with 1,200 to 9,600 Bd.