

FG300 SERIES

FUNKTIONSGENERATOR

FUNCTION GENERATOR

GEBRAUCHSANWEISUNG

OPERATING INSTRUCTIONS

digimess®



Bestell-Nr.
Order No.

FG303 HUC62-01 FG308 HUC62-02

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FG300 Series Function Generator

Operating Instructions

1.0 Mains Connection

The design of the unit meets the requirements of safety class I according to EN 61010-1, i.e. all metal parts accessible from outside and exposed to contact are connected with the protective conductor of the supply network.

Power is supplied via a mains cable with earthing contact

1.1 Installing the function generator

The function generator should not be operated close to equipment that develops heat. To protect the unit from thermal overload the air vents must not be covered and a free space of about 10 cm should be ensured.

1.2 Switching on

The function generator is switched on using the power switch at the front. The power switch separates the unit completely from the primary side of the transformer.

1.3 EMC

The function generator is interference-free according to EN 50081-1 and EN 50081-2. In order to fulfil the limit values in line with present standards, it is absolutely necessary that only cables which are in perfect condition be connected to the unit.

1.4 Inspection and Maintenance

If service is needed, due attention should be paid to the regulations according to VDE 0701. The function generator should only be repaired by trained personnel.

1.5 Warranty

The perfect working order of the function generator is guaranteed for 12 months as from delivery.

There is no warranty for faults arising from improper operation or from changes made to the function generator or from inappropriate application.

If a fault occurs please contact or send your function generator to:

Agents details :

The function generator should be sent in appropriate packing - if possible in the original packing. Please enclose a detailed fault report (functions working incorrectly, deviating specifications and so on) including unit type and serial number.

Would you also kindly verify warranty cases by enclosing your supply delivery note. Any repairs carried out without reference to a valid warranty will initially be at the owner's expense.

Should the warranty have expired, we will, of course, be glad to repair your function generator as per our General Terms Of Assembly And Service.

1.6 Description

The *digimess*[®] FG300 series are general purpose Direct Digital Synthesis (DDS) function generators with frequencies to 3MHz (FG303) and 8MHz (FG308). Frequency setting is by keypad entry or rotary control and the combination of soft touch buttons and rotary controls for the remaining features result in a modern and easy to use instrument. These versatile generators have a 6 digit frequency display for internal or external signals and a 4 digit output amplitude display. The comprehensive specification also includes an output on/off switch and a variable TTL/CMOS amplitude control. Further features include LED indicators for frequency, amplitude and attenuation ranges as well as the selected waveform shape.

2 Technical Data

2.1 General Data

Nominal temperature:	+ 23 °C ± 1 °C
Operating temperature:	0 to + 40 °C
Relative humidity:	Upto 75 %
Atmospheric pressure:	70 to 106 kPa
Operating position:	horizontal or inclined by ±15 °
Operating voltage:	sinusoidal alternating voltage (distortion factor < 5 %) 220 V (+ 10 %)
Frequency:	50Hz (± 5 %)
Safety class:	1, according to EN 61010 Part 1
Radio interference suppression:	EN 55011 Class B

2.2 Specifications

Specification			
FREQUENCY		TTL amplitude	≥3Vpp
Frequency range (FG303)	Sine 0.1Hz to 3MHz Square 0.1Hz to 2MHz Triangle 0.1Hz to 1MHz	TTL fan out	20 TTL loads
Frequency range (FG308)	Sine 0.1Hz to 8MHz Square 0.1Hz to 2MHz Triangle 0.1Hz to 1MHz	CMOS amplitude	3.5 to 13.5Vpp
Resolution	100mHz	DISPLAYS	
Stability	-6	Frequency readout	6 digit LED
Error	±1 x 10 ⁻⁶	External frequency range	10Hz to 60MHz
Accuracy	±50ppm	External voltage range	0.2V to 20V
OUTPUT		Error	-4
Waveforms	Sine, Square, Triangle, TTL/CMOS	Voltage readout	±1 x 10 ⁻⁴
Output level	20mV to 20Vpp (no load)	GENERAL	
Attenuation	0dB, -40dB	Input voltage	220Vac ±10% 50Hz ±5%
Output impedance	50Ω ±10%	Weight	Approx 1.5kg
DC offset	±10V (no load)	Size W x H x D	265(W) x 110(H) x 340(D) mm
Duty cycle	20% to 80%	Temperature	Operating 0°C to 40°C Storage -20°C to 70°C
WAVEFORMS		Humidity	Up to 75%
Sine distortion	<0.6% 1kHz	ORDERING INFORMATION	
Triangle linearity	≥98% 100mHz to 100kHz ≥95% 100kHz to 1MHz	HUC62-01 FG303	3MHz function generator
Square rise and fall time	<30ns	HUC62-02 FG308	8MHz function generator
		Accessories supplied	Operators manual BNC test lead Mains lead

3.0 Operating instructions

3.1 Mains input

The mains input connector is located on the rear of the unit. Before connecting to the mains supply the user should verify that the unit is set to the correct voltage for the country of use.

3.2 Mains input fuse

The mains fuse is located on the rear of the unit. The fuse should be F1A 250V for 110Vac and F500mA 250V for 220Vac.

3.3 Power on/off

The mains power to the unit is switched on and off using the POWER on/off pushbutton. After switching the power on the unit performs an internal self test. After successful completion of the self test the unit is ready for use. Note : controls should not be adjusted during the self test as errors may occur and the unit would require resetting by turning off and then on again.

3.4 Frequency setting

Press SHIFT +5 (V/F) to switch between frequency and amplitude display.

Set frequency

The frequency is set using the numeric keypad. Enter the desired frequency on the keypad followed by SHIFT and either +8 (MHz), +9 (kHz) or +0 (Hz). If the frequency exceeds the maximum setting an Error message is displayed.

Edit frequency

Push the Frequency control knob to move the cursor to the correct position. Turn the Frequency control knob to change the frequency setting. If the frequency exceeds the maximum setting an Error message is displayed.

3.5 Amplitude setting

Press SHIFT +5 (V/F) to switch between frequency and amplitude display. The amplitude of the 50 ohm output is adjusted by using the AMPL control and the set amplitude is then shown on the LED display. The attenuation of the output amplitude is selected using the SHIFT and +4 (0dB) or SHIFT +3 (40dB) pushbuttons.

3.6 Offset

The output offset level can be adjusted by using the OFFSET control. In the off position the offset is zero.

3.7 Symmetry

The symmetry (duty cycle) of the output waveform can be adjusted using the DUTY control. In the off position the symmetry (duty cycle) is 50%

3.8 50 ohm output

The 50 ohm output socket provides the main output of the unit from a 50 ohm source impedance.

3.9 TTL/CMOS output

Press SHIFT +TTL/CMOS to activate the TTL/CMOS output. This output socket provides a TTL or CMOS level square wave signal adjustable between 3V and 13.5V using the TTL/CMOS control. In the off position the output is 5V.

3.10 Frequency counter external input

The unit can be used as a frequency counter for external signals by pressing SHIFT +7 (COUNTER) pushbutton. The counter's frequency range is 10Hz to 60MHz with an input signal to the connector on the rear panel between 0.2V and 20V.

3.11 Output ON

The output is switched on using the OUTPUT ON pushbutton.

3.12 Waveform select

The output waveform can be set to sinewave, triangle wave or square wave by using the WAVE pushbutton.

3.13 Power output

The power output is not fitted to these models and the PO push button has therefore no effect.

Der Hersteller/importeur
The manufacturer/importer
Le producteur/importateur

Digimess Instruments Ltd

Anschrift/Address/Adresse

Stenson House
Stenson
Derby
DE73 1HL
ENGLAND

erklärt hiermit eigenverantwortlich, dass das
Produkt :
hereby declares that the product :
declare, que le produit :

Bezeichnung/Name/Description

Funktionsgenerator
Function generator
Generateur de fonctions

Type/Model/Type

FG303, FG308

Bestell-Nr/Order No/No de ref

HUC62-01, HUC62-02

Folgenden Normen entspricht :
is in accordance with the following
specifications :
correspond aux normes suivantes :

EN61010-1 (1994)
DIN EN 50081-1 (1993) DIN EN 50081-2 (1994)
EN50082
EN 55011 (1991) Class B
EN 55022 (1987) Class B
IEC 801-2 (1991)/prEN 55024-2 (1992) 2kV
IEC 801-4 (1988)/prEN 55024-4 (1993) 1kV Burst
IEC 801-3 (1984) 3V/m ; 0,15-150MHz

Das Produkt erfüllt somit die Forderungen
folgender EG-Richtlinien :
Therefore the product fulfills the demands of
the following EC-Directives :
Le produit satisfait ainsi aux conditions des
directives suivantes de la CE :

EN61000-3-2
EN61000-3-3
2002/95/EC RoHS
2002/96/EC WEEE

73/23/EWG

Richtlinie betreffend elektrische Betriebsmittel zur
Verwendung innerhalb bestimmter Spannungsgrenzen
Directive relating to electrical equipment designed for
use within certain voltage limits
Directive relatives au materiel electrique destine a etre
employe dans certaines limites de tension

89/336/EWG

Richtlinie über die elektromagnetische Verträglichkeit
Directive relating to electromagnetic compatibility
Directive relatives a la compatibilitie electromagnetique

A Smith

A.P. Smith

Derby, 1.6.2012

Leiter Qualitätsmanagement
Quality Manager/Directeur Controle de Qualite