



THURLBY THANDAR INSTRUMENTS

TG120



20MHz function generator

- *0.2Hz to 20MHz frequency range*
- *10mV to 20V pk-pk from 50 Ω, plus TTL/CMOS output*
- *DC offset control with zero detent*
- *Variable symmetry control*
- *External sweep input*
- *Very low cost*

TG120 Low-cost 20MHz function generator

An essential instrument

The function generator is one of the most versatile instruments available.

It can generate a variety of precision waveshapes over a range of frequencies from mHz to MHz. It can provide a wide range of controlled amplitudes from a low impedance source and maintain constant amplitude as the frequency is varied.

Voltage control of frequency allows FM modulation to be introduced or can provide a swept frequency source for such tasks as frequency response testing.

20MHz from a low-cost generator

Most lower cost function generators use a technology which enables them to operate up to no more than 2MHz.

The TG120 utilises an alternative technology which retains its waveform quality right up to 20MHz.

Variable symmetry for pulse and ramp waveforms

The TG120 provides switchable bi-directional variable symmetry which enables variable duty cycle pulse waveforms and saw-tooths to be generated.

Sweep mode operation (external)

The TG120 can be operated in sweep mode by connecting an external sweep voltage. A sweep range of at least 20:1 can be achieved.

Wide range level control

The TG120 provides a main output with a maximum emf of 20V pk-pk from a 50Ω source.

An amplitude vernier with a range of 26dB is combined with two -20dB switched attenuators to provide levels down to 10mV pk-pk. Variable DC offset of ±10V is available via a centre detent control.

An auxiliary output provides a fixed 0 to +5V level suitable for driving both TTL and CMOS loads.

Key features

- 0.2Hz to 20MHz frequency range
- 10mV to 20V pk-pk from 50 Ω
- TTL/CMOS auxiliary output
- DC offset control with zero detent
- Variable symmetry control
- External sweep input

Designed and built in the U.K. by:



Thurlby Thandar Instruments Ltd. Glebe Road, Huntingdon. Cambs.
PE29 7DR England Tel: 01480 412451 Fax: 01480 450409
Email: sales@tti-test.com Web: www.tti-test.com

Technical Specifications

FREQUENCY

Frequency Range:	0.2Hz to 20MHz in 8 overlapping decade ranges with fine adjustment by a vernier.
Vernier Range:	>10:1 on each range.
Vernier Accuracy:	Typically ±5% of full scale.

SWEEP MODE (EXTERNAL)

Input Impedance:	82 kΩ
Sweep Range:	Typically > 20:1
Input Sensitivity:	Typically 0 to 2V for 10:1 sweep
Max. Input Voltage:	±10V
Max. Slew Rate of sweep voltage:	0.1V/us

OPERATING MODES

(Specifications apply for the top decade of each frequency range and output 10V peak-to-peak into 50Ω termination).

SINE

Distortion:	Typically 2% on 200, 2k and 20k ranges.
Amplitude Flatness:	±0.2dB to 200kHz; ±2dB to 20MHz.

TRIANGLE

Linearity:	Typically 99% on kHz ranges.
------------	------------------------------

SQUAREWAVE

Rise and Fall Times:	<22ns
----------------------	-------

DC

Range:	±10V from 50 Ω
--------	----------------

SYMMETRY

Symmetry Range:	Typically variable from 1:6 to 6:1 up to 500kHz.
-----------------	--

OUTPUTS

50 Ω

Three switch-selectable ranges with 26dB vernier control within each range.	
0dB Range:	1V to 20V peak-to-peak (0.5V to 10V into 50 Ω).
-20dB Range:	100mV to 2V peak-to-peak (50mV to 1V into 50 Ω)
-40dB Range:	10mV to 0.2V peak-to-peak (5mV to 0.1V into 50 Ω)
DC Offset Range:	±10V from 50 Ω. DC offset plus signal peak limited to ±10V (±5V into 50 Ω). DC offset plus waveform attenuated proportionally in -20dB and -40dB position.

TTL/CMOS

Capable of driving 4 standard TTL loads.

GENERAL

Power:	230V or 115V nominal 50/60Hz, adjustable internally; operating range ±14% of nominal; 30VA max. Installation Category II.
Operating Range:	+5°C to +40°C, 20% to 80% RH.
Storage Range:	-10°C to +65°C
Environmental:	Indoor use at altitudes to 2000m, Pollution Degree 1.
Electrical Safety:	Complies with EN61010-1.
EMC:	Complies with EN61236.
Size:	220(W) x 82(H) x 230(D) mm, (10.3 x 3.4 x 9.2") excluding feet.
Weight:	1.5 Kg (3.3lb).

Thurlby Thandar Instruments Ltd. operates a policy of continuous development and reserves the right to alter specifications without notice.