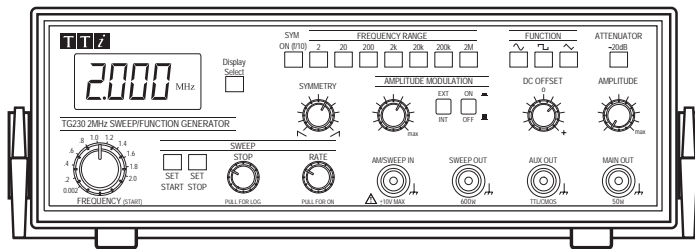


TG200 Series 2MHz Function Generators



- 0.002Hz to 2MHz frequency range
- Very high waveform quality at all frequencies & levels
- 20V pk-pk from 50 Ω or 600 Ω , plus TTL/CMOS output
- 1000:1 frequency change by vernier or external voltage
- Variable symmetry with constant frequency
- Variable DC offset with zero detent
- Precision internal lin/log sweep (TG230 only)
- Internal/external AM up to 100% (TG230 only)
- Digital display of frequency (not TG210)
- Digital display of amplitude and offset (not TG210)

Three models meeting a variety of needs

The **TG210** offers all of the basic generator functions including sine, square & triangle waveforms, variable DC offset, variable symmetry and external sweep input.

The **TG215** adds a digital display of frequency, amplitude and offset for greater precision and convenience.

The **TG230** has all the features of the TG215 plus an internal sweep generator with linear or log sweep, variable sweep rate and a sweep output socket. It also offers internal or external amplitude modulation.

Exceptional waveform quality

The TG200 series provides very high waveform quality under all conditions. That means low sinewave distortion, low aberration triangle waves and fast-edged square waves with low overshoot.

Unlike many competitive products good waveform quality is maintained throughout the frequency range, and at low output levels.

All models have bi-directional variable symmetry at constant frequency from 1:9 to 9:1.

Digital display for precision and convenience

The TG215 and TG230 have the convenience of a digital display. Unlike competitive products the display provides a readout not just of frequency, but of amplitude and offset as well.

Wide range level control

The main output has a maximum emf of 20V pk-pk from a 50 Ω or 600 Ω source. An amplitude vernier with a range of 40dB is combined with a -20dB switched attenuator to provide levels down to 20mV pk-pk. Variable DC offset of +/-10V is available via a centre detent control.

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

Wide sweep range

Each range can be swept by at least 1000:1 either manually or via the sweep control input. The TG230 incorporates a versatile internal sweep generator capable of providing linear or logarithmic frequency sweeps.

The TG230 provides further versatility by adding AM facilities. The modulation can be external or internal (via a 400Hz internal generator) with modulation levels fully variable between 0% and 100%.

Note: This is a faxable data sheet, a colour brochure is also available.

FREQUENCY

Frequency Range: 0.002Hz to 2MHz in 7 overlapping decade ranges with fine adjustment by a vernier.

Vernier Range: 1000:1 on each range.
Vernier Accuracy: Typically +/-5% of full scale for TG210; see Meter Accuracy for TG215 & TG230.

SWEEP MODES

INTERNAL (TG230 only)

Sweep Range: 1000:1 within each range.
Sweep Rate: Adjustable, typically 20ms to 20 secs.
Sweep Mode: Linear or logarithmic. Sweep start and stop frequencies displayed at the press of a button.

EXTERNAL

Input Impedance: 10k Ω
Input Sensitivity: 0 to 3V for 1000:1 sweep
Max. Input Voltage: +/-10V
Sweep Linearity: Better than 1%
Max. Slew Rate: 0.1V/us

AMPLITUDE MODULATION (TG230 only)

Depth: Variable 0 to 100%
Frequency: 400Hz (internal). DC to 100kHz (external).
External Sensitivity: Approximately 2V peak-to-peak for 50% modulation.

METER ACCURACY (TG215/230 only)

Frequency: +/- 1 digit on 2k to 2M ranges; better than 1% of full scale on 2 to 200 ranges.
Amplitude: Typically 5% of full scale
DC Offset: Typically 2%
Resolution: 0.05% maximum on all ranges (1 in 2000)
Update Rate: Varies with range; at least 2 updates per second

OPERATING MODES

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

Sine Distortion: Less than 0.5% on 200, 2k and 20k ranges; less than 1% on 2, 20 and 200k ranges; all harmonics >25dB below fundamental on 2M range.

Amplitude Flatness: +/-0.2dB to 200kHz; +/-1dB to 2MHz.

Triangle Linearity: Better than 99% to 200kHz

Rise and Fall Times: <100ns

Mark - Space Ratio: 1:1 +/- 1% to 100kHz

DC Range: +/-10V from 50 Ω

Symmetry Range: Variable typically between 1:9 to 9:1 (on top decade of each range), frequency divided by 10.

OUTPUTS

50 Ω and 600 Ω

Two switch-selectable ranges with 40dB vernier control within each range. (No 600 Ω output on TG230)
0.2V to 20V peak-to-peak (0.1V to 10V into 50 Ω).
-20dB Range: 20mV to 2V peak-to-peak (10mV to 1V into 50 Ω)
DC Offset: +/-10V from 50 Ω . DC offset plus signal peak limited to +/-10V (+/-5V into 50 Ω). DC offset plus waveform attenuated proportionally in -20dB position.

TTL: Fixed 0 to +5V output capable of driving CMOS and 2 standard TTL loads.

6V ramp from 600 Ω .

SWEEP OUT

GENERAL

Input Voltage: 110/120 volts AC nominal 50/60Hz or 220/240 volts AC nominal 50/60Hz by rear panel adjustment. 25VA max. 25VA max.

Power Consumption: +50C to +400C, 20% to 80% RH.

Operating Temperature Range: +50C to +400C, 20% to 80% RH.

Storage Temperature Range: -100C to +650C

Size: 260(W) x 88(H) x 235(D)mm (10.2 x 3.4 x 9.2"), excluding handle and feet.

Weight: 1.9kg (4.2lb)

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

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