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TTi – Function generators with output to 3MHz and built-in frequency counter

A revised version of its established TG300 series of function generators, now housed in the company's latest 2U high bench instrument case, has been announced by TTi (Thurlby Thandar Instruments).

The TG300 Series is a range of three function generators with a maximum frequency of 3MHz and simultaneous digital display of frequency and level. The top two models of the series (TG320 and TG330) also have an external frequency counter mode which utilises the full width of the display to provide up to 7.5 digits of resolution. The frequency range in this mode is from 5Hz up to 120MHz, and the input sensitivity is better than 50mV rms.

Accuracy is typically better than 10 parts per million, and an external adjustment point allows re-calibration when high accuracy is essential. A measurement period of 0.5 or 5 seconds can be selected. Reciprocal counting ensures high resolution regardless of input frequency. Thus, for example, mains frequency can be measured to a resolution of 0.001Hz.

The TG300 series can generate sine, square, triangle, pulse and ramp waveforms from 0.03Hz up to 3MHz. Variable bidirectional symmetry with constant frequency is provided over a 10:1 range. An external sweep input allows the frequency on each range to be varied by at least 1000:1.

Auto-ranging reciprocal frequency measurement gives 4-digit resolution with rapid update right down to 2Hz. Accuracy is within ±1 digit (±0.03% at full scale). To maintain a fast update below 2 Hz, the measurement mode is changed, resulting in 3-digit resolution. When compared to the normal fixed gate-time meters used in other products, the TG300 series provides both higher accuracy and faster display update across the whole frequency range.

The output level display can be selected to show any of three values: peak-to-peak amplitude, RMS amplitude or DC offset. The decimal point and units are changed automatically, resulting in a display of the true amplitude regardless of the

attenuator setting.

Each generator provides a main output with a maximum EMF of 20V peak-to-peak from a 50 ohm or 600 ohm source. An amplitude vernier with a range of 20dB is combined with two switched attenuators of -20dB and -40dB to provide levels down to 2 mV peak-to-peak unterminated.

Variable DC offset of ±10 V is available via a centre detent control. An auxiliary output provides a fixed 0 to +5 V level suitable for driving both TTL and CMOS loads.

The top model in the series, the TG330, has a built-in sweep generator providing linear or logarithmic sweeps with periods ranging from 20 ms to 20 seconds. AM capability is also incorporated with a choice of internal or external modulation from 0 to 100%, says the company.

Notes