TOE 7741

Power function generator with integral feedback voltage protection

TOE 7741 – 63 W

Special features

- Frequency range 1 mHz to 100 kHz
- High output power > 63 W into 8 Ohm
- Max. output amplitude > 45 V_{pp}
- Output with feedback voltage protection
- Frequency counter up to 30 MHz

TOE 7741 power function generator with 63 W output power and integral frequency counter

The outstanding feature of the TOE 7741 power function generator is its high power output of over 63 W (with rectangular waveforms).

This power is achieved at an output amplitude of 45 V_{pp} into 8 Ohm load. Since the output amplifier has an internal resistance of approx. 0 Ohm and is shielded by feedback voltage protection, any external voltages of up to 120 V will not destroy its output stage. Furthermore, all front-panel inputs and outputs are no-load and short-circuit proof. The frequency settings are made using a decade switch, the frequency dial and the frequency offset potentiometer. The latter allows frequency settings with a reproducibility of < 0.1 %.

The outstanding feature of this instrument is its frequency counter that can measure both internal and external signal frequencies. The counter has an LED display. Besides the basic sine, triangle and square functions, the instrument generates positive and negative pulses and bipolar DC voltage, and can also be used as a broadband power amplifier for the range DC up to 100 kHz.

Technical specifications

Functions and operating modes

Functions	Sine, triangle, square, positive and negative pulses, broadband power amplifier, DC, variable symmetry
Operating modes	Free-running, external sweep-frequency control, amplifier mode, frequency counter

Frequency characteristics

Frequency range	1 mHz to 100 kHz in 6 decadic subranges
Frequency offset	± 2 %
Frequency error	± 2 digits, 2 % of full-scale value when using the scale
Drift	1 x 10^{-3}/K, 5 x 10^{-3} in 8 hours, in each case following 30 min warm-up time

Function output

Output amplitude	V_{pp} = 45 mV to 45 V, 22.5 mV to 22.5 V in pulse mode
Output impedance	Approx. 0 Ohm. The output is no-load and short-circuit proof
Feedback voltage protection	< 120 V
DC offset	0 to ± 15 V
Output attenuator	30 dB continuously adjustable plus 20 dB or 30 dB steps
Frequency response (sine, triangle)	0.5 dB up to 100 kHz

Function specification

at max. output voltage into 8 Ohm load

Sine	
Distortion factor	< 0.5 % up to 50 kHz, < 1 % up to 100 kHz
Triangle	
Linearity error	< 1 % up to 100 kHz
Symmetry error	< 1 % up to 100 kHz
Square	
Transition time	< 0.8 µs
Overshoots	≤ 5 %
Pulse	See square
Symmetry variation	10 % to 90 %, $f_{max.}$ 10 kHz
Amplifier	Approx. 20 dB gain, DC to approx. 100 kHz, distortion factor < 0.2 % up to 100 kHz, input impedance = 10 kOhm

Other signal inputs and outputs

Synchronization signal output	TTL-compatible, source impedance: 50 Ohm
Modulation input (VCO)	Approx. 5 V for a frequency variation ratio of 1000:1, R_i = 10 kOhm
OCV output	0 to 5 V output voltage for a frequency change 1:1000
EXT IN	Amplifier input, max. input voltage 15 V_{rms}, R_i = 10 kOhm

Frequency counter mode

Frequency range	< 1 Hz to 30 MHz
Resolution	4 or 5 digits with autoranging
Accuracy	± 2 digits
Sensitivity	150 mV_{rms} < 10 MHz 250 mV_{rms} > 10 MHz
Input impedance	1 MOhm II 120 pF
Input protection	Up to 15 V_{rms}

General data

Line voltage	115/230 V ± 10 % 47 Hz to 63 Hz
Power consumption	140 VA
Operating temperature	0 °C to 40 °C
Dimensions (W x H x D)	265 x 147 x 480 mm
Weight	Approx. 7 kg
Housing	Aluminium

Ordering data

Power function generator	TOE 7741

Options

TOE 9501	19" adapter, 3 HU
TOE 9503	19" rack module, 4 HU
TOE 9008	Carrying handle