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PULSE GENERATORS & DATA GENERATORS

Versatile 50 MHz Source

HP 8112A

- Full pulse capability
- Modulation
- Ramps and haversines
- Width/duty cycle
- Device protection
- Error recognition and self test

DESIGNED FOR HP-IB SYSTEMS

Supported by HP ITG Software



HP 8112A

HP 8112A Pulse Generator

The HP 8112A is a fully programmable 50 MHz pulse generator with 5 ns transitions and 32 Vpp (into open circuit) max output amplitude. All pulse parameters are variable including delay and double pulse spacing.

Besides the comprehensive trigger modes, external modulation capabilities extend applicability. 3-level signals and upper level, width, period and delay-modulated signals are available. These can be combined with the trigger modes so that complex real-life signals like modulated bursts are simulated easily.

Step response and trigger hysteresis measurements require fast transitions or sawtooth signals as obtained in the HP 8112A's linear transition mode—either fixed 5 ns or variable from 6.5 ns. The new cosine transitions, also variable from 6.5 ns, mean that band-filtered signals are now just as simple to obtain.

Sensitive devices are protected by programming output limits and the upper level can be controlled by the device supply. Also, constant energy or constant width can be programmed.

Dual channel operation is feasible by operating HP 8112A's in a master/slave combination.

For really easy operation a green button gives error-free settings. A new softkey operating concept plus detailed error recognition make the HP 8112A's powerful versatility easy to handle.

Specifications

Specifications apply with 50-ohm load, and temperatures in the range 0°C to 55°C.

Timing (specifications apply for min transition times)
Period: 20.0 ns to 950 ms.
Delay: 75.0 ns to 950 ms.
Double pulse: 20.0 ns to 950 ms.
Width: 10.0 ns to 950 ms.
Accuracy: ± 5% of progr value ± 2 ns (delay: ± 4 ns).
Duty cycle: 1% to 99% (Min: 10 ns. Max: period −10 ns).
Accuracy: ± 10% of progr value.

Pulse Characteristics (voltages double when driving into open circuit)
Levels
High level: −7.90 V to 8.00 V.
Low level: −8.00 V to 7.90 V.
Accuracy: ± 1% of progr value ± 3% amplitude ± 40 mV.
Settling time: 100 ns + transition time.

Transition times
Fixed: 5 ns typical
Linear and Cosine: 6.5 ns to 95.0 ms (max edge ratio 1:20 within a 1.5-decade range. Ranges overlap by 0.5 decade).
Accuracy: ± 5% of programmed value ± 2 ns.
Preshoot, overshoot, ringing: ± 5% ± 10 mV (variable transitions), ± 10% ± 10 mV (fixed transitions).
Output resistance: 50 ohm ± 5%.
Operating modes: Normal, Trigger, Gate, Ext Width (pulse restoration), Ext Burst (1 to 1999 pulses).

Control (Modulation) Modes
Period, delay, width covered in 8 non-overlapping decades (max input frequency 8 kHz.).
High level: −8 V to +8 V, independent of progr low level (min input transition 200 μs).

General
HP-IB: all keys programmable. Learn, status and error reporting capability. HP-IB interface functions: SH1, AH1, T6, L4, SR1, RL1, PP0, DC1, DT1.
Memory: retains current operating state. 9 store/recall locations, 1 fixed set of parameters.
Repeatability: factor 4 better than accuracy.
Environmental
Storage temperature: −40°C to +65°C.
Operating temperature: 0°C to 55°C.
Humidity: 95% RH, 0°C to 40°C.
Power: 100/120/220/240 V rms; +5%; -10%; 48 to 440 Hz; 120 VA max
Weight: net , 5.9 kg (13 lb). Shipping, 8.0 kg (18 lb).
Size: 89 H x 212.3 W x 450 mm D (3.5″ x 8.36″ x 17.7″).

Ordering Information

HP 8112A Programmable Pulse Generator*
Opt 910 Extra Operating and Service Manual
Opt W30 Extended Repair Service. See page 723
HP 5062-4001 Bail Handle Kit
HP 5062-3972 Rackmount Kit (single HP 8112A)
HP 5062-3974 Rackmount Kit (two instruments)
HP 5062-3994 Lock Link Kit (for use with HP 5062-3974)

* HP-IB cables not supplied, see page 706

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