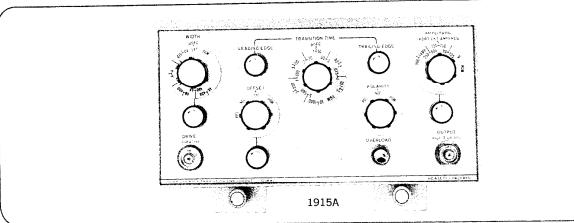
SIGNAL SOURCES 1900 SYSTEM continued

High power, variable rise and fall

Variable transition time output Model 1915A



Model 1915A Variable Transition Time Output, a half-size plug-in, provides high-power, variable risetime and falltime output pulses. These pulses, with reversible polarity and with risetime and falltime as fast as 7 ns, are useful in testing magnetic memory devices and in other applications requiring high currents and voltages. Maximum current available is 1 ampere (50 volts into 50 ohms).

Either 50-ohm or high impedance source is available. The 50-ohm source impedance preserves the clean pulse shape by absorbing reflections from an external load. The high impedance source provides maximum current and voltage.

Risetimes and falltimes are variable from 7 ns to 1 ms. A common control selects the range and verniers select risetime and falltime separately. Ratios between transition times up to 100:1 provide a wide degree of flexibility.

External width operation (described on pages 356 and 357) extends Model 1915A usefulness to applications such as pulse code modulation, variable pulse width logic, and other pulse-shaping requirements.

Offset capability of the Model 1915A allows the pulse baseline to be varied over a ± 60 mA range. A zero position on the current offset switch allows setting the baseline quickly and accurately at ground.

All front panel control functions can be externally programmed. This capability is available initially as Option 001, or a kit may be ordered at a later date. Other options available (listed in specifications) are for amplitude calibration in volts, and either positive-only or negative-only offset and pulse output polarity (two Model 1915A's may be operated in one mainframe, provided the offset and pulse polarities are different).

Specifications, 1915A (operates in 1900A mainframe only)

Output pulse

Source impedance: 50Ω or high Z; self-contained 50Ω termination may be connected or disconnected.

High Z output: approximately 5 k ohms shunted by 45 pF. 50Ω output: approximately 50Ω shunted by 45 pF.

Amplitude (short circuit current): 50 milliamperes to 1 ampere in 4 ranges; 2.5:1 vernier allows continuous adjustment on any range. Voltage into external 50Ω is ±2.5 V to ±50 V with high Z source; ±1.25 V to ±25 V with 50Ω source. Maximum amplitude (including offset) is ±50 V.

Pulse top variations

With 50 Ω source and 50 Ω load: $\pm 5\%$ for transition times 7 ns to 20 ns; $\pm 2\%$ for transition times >20 ns.

With high Z source and 50 Ω load: $\pm 5\%$ for all transition times.

Polarity: + or -, selectable.

Duty cycle: 0 to >90%, internal width mode; 0 to 100%, external width mode.

Baseline offset: ± 60 milliamperes. Maximum offset into external 50Ω is ± 1.5 volts with 50Ω source; ± 3 volts with high Z source.

Overload: overload light comes on to indicate protection circuits are limiting output to prevent damage to output transistors. Two common combinations of overload conditions are: (a) 25-ohm combined load (source and external), <0.2% duty cycle, and width >2 µs; and (b) 50-ohm combined load, >2 µs transition time, and >35 volts amplitude.

Transition times: 7 ns (10 ns with high Z source) to 1 ms in 11 ranges (1,2,5 sequence); two 100:1 verniers allow independent control of rise- and falltimes.

Width

Internal

Ranges: 10 ns to 40 ms in 7 decade ranges (except for first

range which is 10 to 40 ns); 10:1 vernier allows continuous adjustment on any range.

adjustment on any range.

Width jitter: <0.5% of selected pulse width.

External: provides pulse amplifier operation; output pulse width determined by width of drive input.

Drive input

Repetition rate: 0 to 25 MHz. Input impedance: 50Ω , dc-coupled.

Sensitivity: $> \pm 1$ volt peak.

Connection: drive input may be connected internally or externally from other plug-ins, selected by internal switch.

Weight: net, 51/2 lbs (2,5 kg); shipping, 9 lbs (4,1 kg).

Options

Option 001: programming connector and circuitry allowing width range, Transition Time range, Amplitude range, Offset and Polarity selection by contact closure to ground; verniers for Width, Leading Edge, Trailing Edge, Offset, and Amplitude programmed by analog current allowing continuous control on any range. Price: Model 1915A Option 001, \$275 (additional).

Option 002: provides positive only pulse output and positive only offset. Price: Model 1915A Option 002, deduct \$225.

Option 003: provides negative-only pulse output and negative-only offset. Price: Model 1915A Option 003, deduct \$225.

Option 004: calibration of pulse amplitude in voltage. Four ranges provide from ±2.5 V to ±50 V from high Z source into 50Ω external load or ±1.25 V to ±25 V from 50Ω source into 50Ω external load. Price: Model 1915A Option 004, add \$25.

Accessories available

Programming kit: field installation of same capability as Option 001, Price, IIP Part No. 01915-69501, \$275.

Price: HP Model 1915A, \$1600.