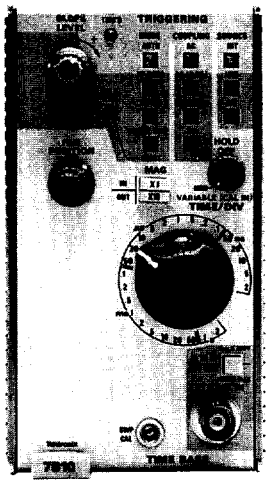
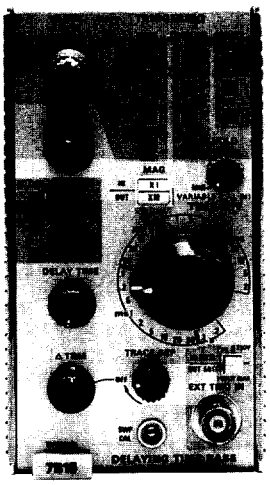


7B10 Time Base



7B15 ΔDelaying Time Base

7B10/7B15

Features:

- **0.2 ns to 0.2 s/Div Calibrated Time Bases**
- **Triggering to 1 GHz**
- **Variable Trigger Holdoff**
- **Auto Triggering**
- **ΔTime Measurements With CRT Readout (7B15)**
- **Delayed Time Measurements With CRT Readout (7B15)**
- **Vertical Trace Separation Between Two Delayed Sweeps (7B15)**

The 7B10 and 7B15 are horizontal time bases designed for use with the 7100-Series mainframes to provide optimum bandwidth/sweep-speed compatibility, but may also be used with the 7800- and 7900-Series mainframes. (Each may be used in any slower 7000-Series mainframe with some reduction in sweep accuracy at the fastest sweep speed. See Oscilloscope Reference section.)

Either plug-in can be used separately as an independent, single time base, or they can be combined in any mainframe with two horizontal compartments for delaying and delayed operation.

The 7B10 and 7B15 provide Δtime measurement in addition to the standard delay-time display.

Delta time measurement is accomplished simply by manually positioning two intensified zones on the waveform. The time difference between the two zones is displayed in the CRT readout. (See waveform photos in the description of the 7B80/7B85 time bases.) Expansion and overlapping of the two intensified zones is possible to allow very precise setting of the zones to the desired points on the displayed waveform.

CHARACTERISTICS

MAIN SWEEP

Sweep Rates—Calibrated: 2 ns to 0.2 s/div in 25 steps (1-2-5 sequence). X10 Magnifier extends fastest calibrated sweep rate to 0.2 ns/div. Uncalibrated: Variable is continuous to at least 2.5 times the calibrated sweep.

Sweep Accuracy—Measured over the center eight divisions, +15 to +35 °C, in a 7100-, 7800-, or 7900-Series mainframe. Derate accuracies by an additional 1% for 0 to +50 °C.

Time/Div*1	Unmagnified	Magnified
0.2 s to 10 ns/div	2%	3%
5 and 2 ns/div	3%	4%

*1 *Fastest calibrated sweep rate is limited by 7900-, 7800-, and 7600-Series mainframes.*

Trigger Holdoff Time

	Minimum	Maximum With Variable
0.2 s to 50 ms/div	40 ms	400 ms
20 ms to 2 μs/div	2 times Time/Div Setting	20 times Time/Div Setting
1 to 0.5 μs/div	2 μs	20 μs
0.2 μs to 2 ns/div	2 μs	6 μs

Delay Time Range—(7B15 only) 0.2 or less to at least 9.0 times Time/Div setting.

Delay Time Jitter—(7B15 only) 0.02% of Time/Div setting up through 50 μs/div. 0.03% of Time/Div setting plus 0.1 ns for sweep speeds of 20 μs through 100 ns/div.

ΔTime Range—(7B15 only) 0 to at least 9.0 times Time/Div setting.

ΔTime Accuracy—20 ms to 100 ns/div. Within 0.5% of reading +3 counts.

Trace Separation Range—(7B15 only) Functional only in ΔDelay Time mode when alternating or chopping between time-base units. The second delayed-sweep display can be vertically positioned at least three divisions below the first delayed-sweep display.

Single Sweep—Requirements are the same as for repetitive signals.

Internal Trigger Jitter—30 ps or less at 1 GHz.

HF Sync Mode—250 MHz to 1 GHz, 0.3 div Internal and 0.75 mV External.

External Trigger Input—Maximum Input Voltage: 250 V (dc + peak ac) for 1-MΩ input, 1 W average for 50-Ω input. Input R and C: 1 MΩ within 5% and 20 pF within 10%; for 50-Ω input, 50 Ω within 2%. Level Range: At least ±3.5 V in Ext÷1.

TRIGGERING

Triggering Sensitivity for Repetitive Signals

Coupling	Triggering Frequency Range*1	Min Signal Required Int	Min Signal Required Ext
AC	30 Hz to 250 MHz	0.5 div	50 mV
	250 MHz to 1 GHz	1.5 div	150 mV
AC LF Rej*2	50 kHz to 250 MHz	0.5 div	50 mV
	250 MHz to 1 GHz	1.5 div	150 mV
AC HF Rej	30 Hz to 40 kHz	0.5 div	50 mV
DC*3	DC to 250 MHz	0.5 div	50 mV
	250 MHz to 1 GHz	1.5 div	150 mV

*1 *The triggering frequency ranges given here are limited to the −3-dB frequency of the oscilloscope vertical system when operating in the Internal mode.*

*2 *Will not trigger on sine waves at or below 60 Hz when amplitudes are less than eight division Internal or 3 V External.*

*3 *The Triggering Frequency Range for DC Coupling applies to frequencies above 30 Hz when operating in the Auto Triggering Mode.*

ORDERING INFORMATION

7B10 Time Base **$2,800**
Includes: Instruction manual (070-2316-00).

7B15 Delaying Time Base **$3,000**
Includes: Instruction manual (070-2318-00).