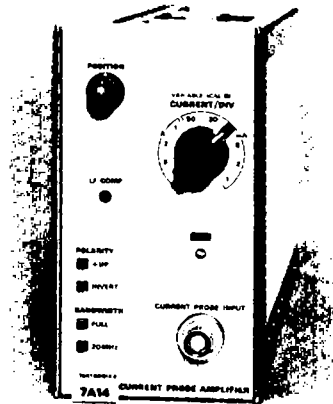




7000-SERIES OSCILLOSCOPES 7A14

- 25 Hz-to-120 MHz BANDWIDTH (7900 FAMILY)
- 1 mA/DIV to 1 A/DIV CALIBRATED DEFLECTION FACTORS



The 7A14 is an AC current probe amplifier for all 7000-Series mainframes. It provides constant bandwidth, dependent on the current probe and mainframe over the 1 mA/div to 1 A/div calibrated deflection factors (see bandwidth specifications). POLARITY is selectable, \pm UP or INVERT, as is BANDWIDTH, FULL or 20 MHz.

Deflection Factor—1 mA/div to 1 A/div in 10 calibrated steps (1-2-5 sequence). Accuracy is within 2% with GAIN adjusted at 10 mA/div. The VARIABLE is continuous between steps and to at least 2.5 A/div.

Displayed Noise—0.2 div or less throughout the calibrated deflection factor range, measured tangentially.

Probes—Are not supplied with the plug-in, and are ordered separately to fit the application. The P6021 and P6022 AC current probes are recommended.

	MAINFRAME	BANDWIDTH (MHz)		RISETIME (ns)	
		P6021	P6022	P6021	P6022
7900 FAMILY	7904/R7903 R7912	55	120	6.4	2.9
7700 FAMILY	7704A Opt 9	50	105	7.0	3.4
	7704A	50	105	7.0	3.4
	R7704	50	105	7.0	3.4
7600 FAMILY	7603/R7603 7603N Opt 11*	50	80	7.0	4.4
7500 FAMILY	7504	45	75	7.8	4.7
	7503	45	75	7.8	4.7
	7514	40	75	7.8	4.7
7400 FAMILY	7403N/R7403N	40	55	8.8	6.4
STORAGE FAMILY	7623/R7623	50	80	7.0	4.4
	7313/R7313	50	80	7.0	4.4
	7613/R7613	24	25	15	14

20 MHz within 3 MHz 20 MHz bandwidth mode.

25 Hz or less (-20°C to $+75^{\circ}\text{C}$) 30 Hz or less (0°C to $+20^{\circ}\text{C}$) with P6021 (lower -3 dB). 250 Hz or less with P6022 (lower -3 dB).

*Refer to Ruggedized Oscilloscope System.

Input Characteristics

	WITH P6021	WITH P6022
MAX CW CURRENT	15 A P-P to 5 MHz, decreasing to 1 A P-P at 100 MHz.	6 A P-P to 10 MHz, decreasing to 2 A P-P at 150 MHz.
MAX PULSE CURRENT	25 A peak, limited to an Amp-second product of 2.0 A-ms or 5.3 A RMS.	25 A peak, limited to an Amp-second product of 30 A- μ s or 2.1 A RMS.
MAX VOLTAGE	600 V (DC + peak AC)	600 V (DC + peak AC)
DC SATURATION	0.5 A	0.2 A

INSERTION IMPEDANCE 0.03 Ω at 1 MHz, increasing to 1.0 Ω at 60 MHz. 0.03 Ω at 1 MHz, increasing to 0.7 Ω at 175 MHz.

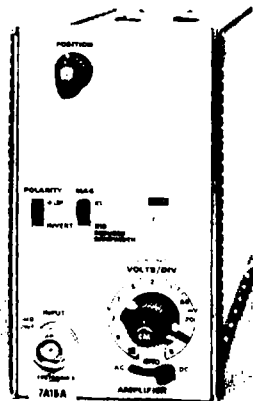
Order 7A14 AMPLIFIER \$700

An optional current-loop adapter is available for the 7700-, 7600- and 7400-mainframe calibrator output.

Order 012-0259-00 \$11

7A15A and 7A15AN

- DC-to-80 MHz BANDWIDTH (7900 FAMILY)
- 5 mV/DIV to 10 V/DIV CALIBRATED DEFLECTION FACTORS
- 500 μ V/DIV at 10 MHz (X10 GAIN)



The 7A15A and 7A15AN are wideband plug-in amplifiers for all 7000-Series mainframes. They feature constant bandwidth over all the deflection factor settings. The two vertical mainframe channels allow the 7A15A/AN to be used alone, or with another vertical unit for dual-trace operation. Polarity of the display is

selectable. The 7A15A/AN can also be used in the horizontal channels for X-Y operation. The 7A15AN does not incorporate CRT READOUT; all other specifications are identical.

Bandwidth

	MAINFRAME	BANDWIDTH	RISETIME
7900 FAMILY	7904/R7903 R7912	80 MHz	4.4 ns
7700 FAMILY	7704A Opt 9	75 MHz	4.7 ns
	7704A	75 MHz	4.7 ns
	R7704	75 MHz	4.7 ns
7600 FAMILY	7603/R7603 7603N Opt 11*	65 MHz	5.4 ns
7500 FAMILY	7504	60 MHz	5.9 ns
	7503	60 MHz	5.9 ns
	7514	60 MHz	5.9 ns
7400 FAMILY	7403N/R7403N	50 MHz	7.0 ns
STORAGE FAMILY	7623/R7623	65 MHz	5.4 ns
	7613/R7613	65 MHz	5.4 ns
	7313/R7313	25 MHz	14 ns

10 Hz or less, AC coupled (lower -3 dB).

*Refer to Ruggedized Oscilloscope System.

7000-SERIES OSCILLOSCOPES

7A15A and 7A15AN



Deflection Factor—5 mV/div to 10 V/div in 11 calibrated steps (1-2-5 sequence). X1 GAIN accuracy is within 2% with X1 GAIN adjusted at 10 mV/div. X10 GAIN (increases sensitivity to 500 μ V) accuracy is within 10% at 10 MHz bandwidth throughout deflection factor settings. Uncalibrated VARIABLE is continuous between steps and to at least 25 V/div.

Input R and C—1 M Ω within 2%; \approx 20 pF.

Max Input Voltage—DC coupled 250 V (DC + Peak AC), AC component 500 V P-P max, 1 kHz or less. AC coupled 500 V (DC - Peak AC), AC component 500 V P-P max, 1 kHz or less.

Probes—Are not supplied with the plug-in, and are ordered separately to fit the application.

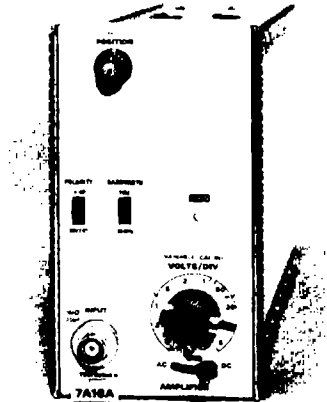
ATTENUATION	RECOMMENDED TYPE	SYSTEM* ACCURACY	RECOMMENDED FAMILY
1X	P6011	2%	All
10X	P6065A	3%	7313, 7400, 7600
	P6053B	3%	7700, 7900
100X	P6009	3%	All
1X FET	P6201	5%	7700, 7900

*System accuracy: temperature range is $\pm 20^{\circ}\text{C}$ to $\pm 30^{\circ}\text{C}$; the calibration signal is applied to the probe tip by an external calibrator whose accuracy is within 0.25%.

Order 7A15A AMPLIFIER \$280
Order 7A15AN AMPLIFIER \$250

7A16A

- DC-to-225 MHz BANDWIDTH (7900 FAMILY)
- 5 mV/DIV to 5 V/DIV CALIBRATED DEFLECTION FACTORS



The 7A16A is a wideband plug-in amplifier for all 7000-Series mainframes. It features constant bandwidth over the deflection factor range of 5 mV/div to 5 V/div. Polarity of the display is selectable, as is bandwidth, which can be either FULL or limited to 20 MHz for low frequency applications.

Bandwidth

	MAINFRAME	BANDWIDTH	RISETIME
7900 FAMILY	7904/R7903 R7912	225 MHz	1.6 ns
7700 FAMILY	7704A Opt 9	170 MHz*	2.1 ns
	7704A	160 MHz	2.2 ns
	R7704	150 MHz	2.4 ns
7600 FAMILY	7603/R7603 7603N Opt 11**	100 MHz	3.5 ns
7500 FAMILY	7504	90 MHz	3.9 ns
	7503	90 MHz	3.9 ns
	7514	90 MHz	3.9 ns
7400 FAMILY	7403N/R7403N	60 MHz	5.9 ns
STORAGE FAMILY	7623/R7623	100 MHz	3.5 ns
	7613/R7613	100 MHz	3.5 ns
	7313/R7313	25 MHz	14 ns

DC to 20 MHz within 3 MHz, 20 MHz bandwidth mode. 10 Hz or less, AC coupled (lower -3 dB).

*System bandwidth temperature range from $-1-20^{\circ}\text{C}$ to $+30^{\circ}\text{C}$.

**Refer to Ruggedized Oscilloscope System.

Deflection Factor—5 mV/div to 5 V/div in 10 calibrated steps (1-2-5 sequence). Accuracy is within 2% with GAIN adjusted at 10 mV/div. Uncalibrated VARIABLE is continuous between steps and to at least 12.5 V/div.

Input R and C—1 M Ω within 2%; \approx 20 pF.

Max Input Voltage—DC Coupled: 250 V (DC + Peak AC); AC component 500 V P-P maximum, 1 kHz or less. AC Coupled: 500 V (DC - Peak AC); AC component 500 V P-P maximum, 1 kHz or less.

DC Stability—Drift with ambient temperature (constant line voltage) is 0.01 div/ $^{\circ}\text{C}$. Drift with time (ambient temperature and line voltage constant) 0.02 div in any one minute after 1 hour warm-up.

Probes—Are not supplied with the plug-in, and are ordered separately to fit the application.

ATTENUATION	RECOMMENDED TYPE	SYSTEM* ACCURACY	RECOMMENDED FAMILY
1X	P6011	2%	All
10X	P6053B	3%	7600, 7700, 7900
	P6065A	3%	7313, 7400
100X	P6009	3%	All
1X FET	P6201	5%	7700, 7900

*System accuracy: temperature range is $\pm 20^{\circ}\text{C}$ to $\pm 30^{\circ}\text{C}$; the calibration signal is applied to the probe tip by an external calibrator whose accuracy is within 0.25%.

Order 7A16A AMPLIFIER \$475