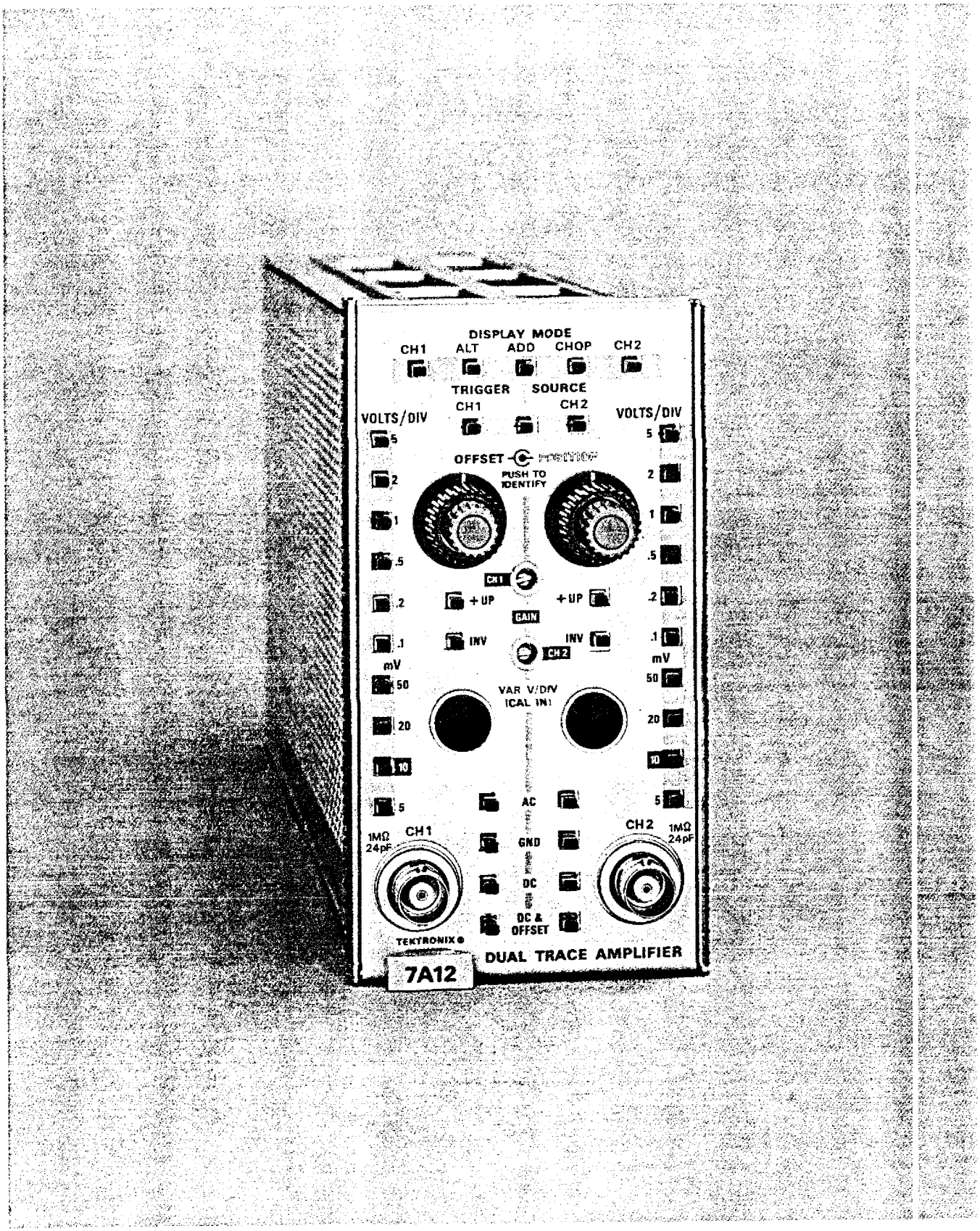

Fig. 1-1. 7A12 Dual Trace Amplifier.

SPECIFICATION

Introduction

The 7A12 vertical amplifier plug-in is designed for use with Tektronix 7000-Series Oscilloscopes. The 7A12 is a dual-channel, wide band amplifier with the upper frequency limit mainly determined by the oscilloscope mainframe in which it is used. For example, the 7A12 used with the 7504 oscilloscope will have an upper bandwidth limit of about 75 MHz. When used with a 7704 oscilloscope, the upper bandwidth limit is about 105 MHz. Internal gain and compensation circuits are auotmatically switched to correspond to the setting of the VOLTS/DIV switch. A +UP/INV switch for each channel allows either channel to be inverted for differential measurements. The 7A12 features a DC offset circuit with a DC offset of at least ±500 divisions for viewing low level AC signals in the presence of a high level DC component.

This instrument will meet the electrical characterstics listed in Table 1-1 following complete calibration as given in Section 5. The performance check procedure given in Section 5 provides a convenient method of checking instrument performance without making internal adjustments.

The following electrical characteristics are valid over the stated environmental range for instruments calibrated at an ambient temperature of +20°C to +30°C, after a five minute warmup unless otherwise stated.

TABLE 1-1

ELECTRICAL

Characteristic	Performance Requirement	Supplemental Information
Deflection Factor Calibrated Range	5 mV/div to 5 V/div, 10 pushbuttons in a 1, 2, 5 sequence	
Deflection Factor Accuracy	Within 2% with GAIN adjustment at 10 mV/div	
Uncalibrated	Continuously variable; VAR V/DIV extends deflection factor to at least 12.5 V/div	
+UP to INVERT Gain Ratio	1:1 within 1%	
Frequency Response	See Table A	
AC (Capacitive) Coupled Input Lower Bandwidth Frequency	10 Hz or less without probe, 1 Hz or less with P6053	
Time Delay Between Channels		500 ps or less
Channel Isolation	At least 3000:1 or 0.3 div with 5 div reference signal at 75 MHz. At least 100:1 with equal deflection factors at 50 MHz or less	

TABLE 1-1 (cont)

Characteristic	Performance Requirement	Supplemental Information
Maximum Input Voltage		
DC Direct Couple		
5 mV/div & 10 mV/div		350 V, DC or DC + Peak AC at kHz or less
20 mV/div to 5 V/div		500 V, DC or DC + Peak AC at kHz or less
AC (Capacitive) Coupled Input		
5 mV/div & 10 mV/div		350 V, DC or DC + Peak AC at kHz or less
20 mV/div to 5 V/div		500 V, DC or DC + Peak AC
Input R and C		
Resistance	1 Megohm within 2%	
Capacitance	25 pF within 1 pF	
R and C Product		Within 1% at all deflection factor settings
Recommended X10 Probe	P6053, 6ft	
Maximum Input Gate Current		0.4 nA at 0 to +35°C 2 nA at +35°C to +50°C
IDENTIFY		Trace deflects up 0.2 div to 0.4 div
Display Noise (Tangentially Measured)		250 μV at 5 mV/div. 0.1 div or less at other deflection factors
Chopped Mode (when installed in vertical compartment. Mainframe dependent.)		
Repetition Rate		500 kHz within 20%
Channel Time Segment		0.8 μs to 1.2 μs
DC Drift		
Drift With Ambient Temperature (Line Voltage Constant)		100 μV/°C or 0.01 div/°C whichever is greater
DC OFFSET Range	At least +1000 div to −1000 div at 5 mV/div At least +500 div to −500 div from 10 mV/div to 5 V/div	
Common Mode Rejection Ratio	At least 10:1 at 40 MHz or less	

TABLE A

7A12 AND MAINFRAME FREQUENCY RESPONSE (five division reference)

With 7900 Series	With 7700 Series	With 7500 Series	With 7400 Series
120 MHz	105 MHz	75 MHz	55 MHz

TABLE 1-2

ENVIRONMENTAL

Refer to the Specification for the associated oscilloscope.

TABLE 1-3

PHYSICAL

Size	Fits all 7000-Series Plug-in Compartments
Weight	2.8 lbs (1.3 kg)