The 4000 Series: A powerful, simple production tool.

The Ampex 4000 Series Switcher has something to appeal to everyone at the teleproduction or broadcast studio.

Since the 4000 Series is fast and easy to operate, production crews will be far less likely to commit costly errors or require retakes. And, in its larger versions with optional features, the 4000 Series will do many things other switchers simply can't do at all. The 4000 Series will enhance your studio's on-air performance and simplify and speed your day-to-day production work.

The financial experts will appreciate it because the 4000 Series can do a lot of work for the money. The switcher's upstream keying capability and multilevel video processing permit one M/E bank to do the work of two or three M/E's on conventional switchers.

A Powerful Switcher

The 4000 Series is a powerful production tool, but it is straightforward and simple. In a very short time you'll feel right at home and be capable of employing its logical and flexible operation to enhance your program and production work. With its extended A/B format and multilevel video processing, the 4000 Series is a formidable tool to have on your side when the "creativity" has to flow fast and furiously.

Built for Confidence

The 4000 Series was designed and developed by people who understand the problems and needs of the professional video industry. The 4000 Series is ruggedly constructed, easy to service and maintain, and is backed by the worldwide spares support and service representatives for which Ampex is famous.

The 4000 Series Switcher. It's built to give you exactly what you want: cost/effective flexibility and superior production capabilities today, while providing growth potential to meet the creative challenges of tomorrow.

Major 4000 Series Features:

- Extended A/B format for logical signal flow and straightforward operation.

- Keypad control allows the operator to control several visual functions from a small space with speed and accuracy.

- Dual bus keyers to provide the ability to put any of 10 key sources (including RGB chroma keys, encoded chroma keys, character generator, luminance keys, etc.) upstream of the M/E amplifier.

- Function Module, together with the keypad's operation lets you fully control the M/E bank without having to reach away from the M/E itself.

- Status indicators show you exactly what's happening on the switcher at all times so you're in total command of every situation.

- Exceptionally high quality keyers deliver clean, noise-free operation, even under adverse conditions.

- Auto-transition is standard on each M/E and downstream keyer.

- Rugged construction using only the highest quality, multi-sourced components assures you a superior level of reliability and maintainability.

- The 4000 Switchers are controllable by electronic editing systems for cost-effective production and post-production applications.
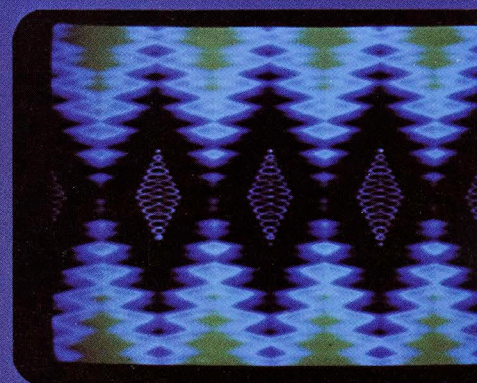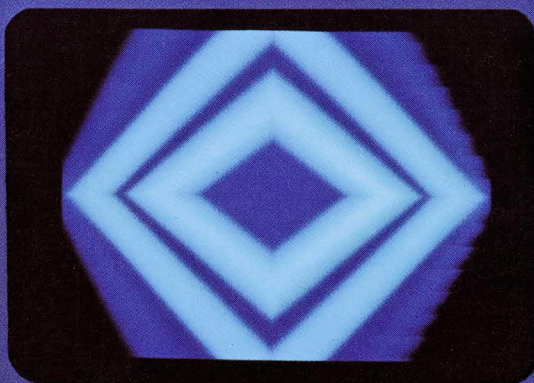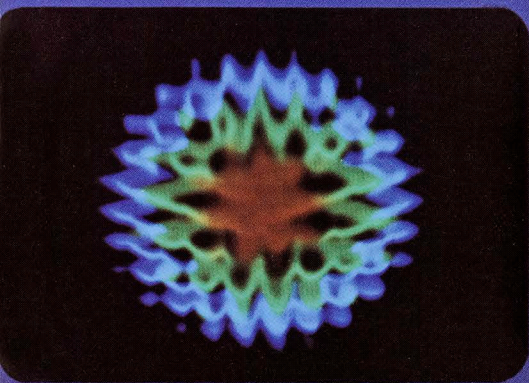
The 4000 Series: Your key to creative and flexible video processing.

As the heart of the television operation, the 4000 Series provides a wide range of effects. The 4000 does its job swiftly and effectively, supporting the technical director in his creative tasks. The 4000 Series easily accommodates virtually any combination of video sources and keys.

Some of the more important operating benefits offered by the 4000 Series include:

Extended A/B Format with "Actual Tally": With the A/B format, the fader position always indicates which bus row is active. Lighted buttons and LED indicators tell you what's going on at all times with functions such as crosspoints, transition modes, and non-standard operations including auto-transition modes, and non-standard operations including auto-transition, inverted keys, pattern pre-sets and pattern modulation, etc. Actual Tally means that the switcher control buttons and indicators will not light unless that function is actually engaged or activated. One quick glance over the panel tells you which modes are active, which buses are on-air, and which special switching functions have been engaged.

Keypad Control: The 4000 Series unique keypad control offers two major advantages. First, it allows a large amount of control in a manageable space. You never have to climb over the switcher, or reach up and out for other controls when time and accuracy are critical. The compact keypad is one reason the video flow is so logical. And secondly, the 4000 Series offers you extremely fast operation. Because
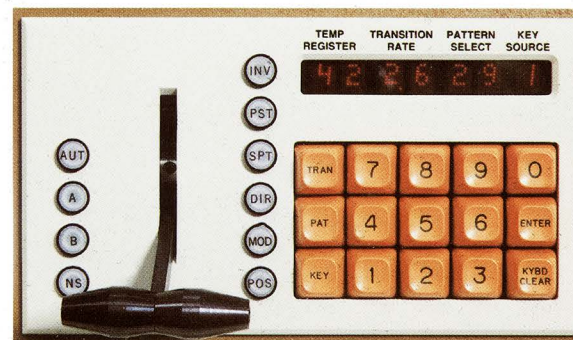
the control functions are kept in such a small area, setting the switcher up or changing set-ups can be done in a flash. After a short time, you'll be surprised at the ease and speed with which you can set effects up and change them. Superb human engineering is one of the 4000 Series' most important features.

The temporary register on the keypad even lets you pre-load a new pattern, key or transition rate for even faster, easier operation. You can also change a pattern, a key or transition rate during transition

The Series 4000 keypad gives you fingertip control of:

- 100 different patterns
- 99 transition rates (in seconds to make your job a lot easier) From 0.1 to 9.9 seconds.
- Key sources (10 key sources from phantom buses that allow you to make **any type of key** appear at **any video level**)

Function Module: The major advantage of the Function Module is its human engineering. All controls which affect video coming out of the M/E unit are kept at the M/E. This results in compact, logical and easy-to-follow operation. Such functions as pattern positioning, pattern modulation (horizontal **and** vertical), key controls, symmetry, border modes and color, etc., are all located on the Function Module along with the keypad, fader and status tallies.

Full status indication (switch lights and LEDs) are provided on the 4000 Series Function Module to assure you of safe, sure operation even under the pressures of live broadcast.

Dual Bus Keyers: Dual bus keyers are located upstream of the M/E amplifier, and they are the heart of the 4000 Series' power. Because these keyers are able to access phantom keying buses, any key sources may be inserted in the video prior to M/E operations. This provides the keying flexibility that has made the 4000 Series so popular. Dual bus
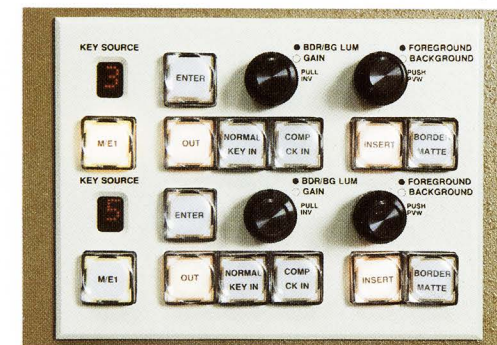

keying allows transitions to be made between backgrounds and keys simultaneously or backgrounds can be changed with the same keys appearing in each background video. Or keys can be changed over the same backgrounds or any of several variations of the process. All of this is accomplished with only the bus keyers and the M/E— without even using the keyer on the M/E itself. Dual bus keying gives you all of the keying power and flexibility you'll need to meet the demands of today's fast-paced teleproduction operations.

4000 Series Keyers: All 4000 Series keyers provide individual control of foreground, background, gain and border luminance. The keyers assure unexcelled video quality at all times. A switcher with this kind of keying power simply should not be handicapped by mediocre quality keys. NTSC-encoded or composite- is among the best

quality available in the industry. It is often difficult to tell the difference between a composite chroma key and the extremely high quality RGB chroma keys with this switcher.
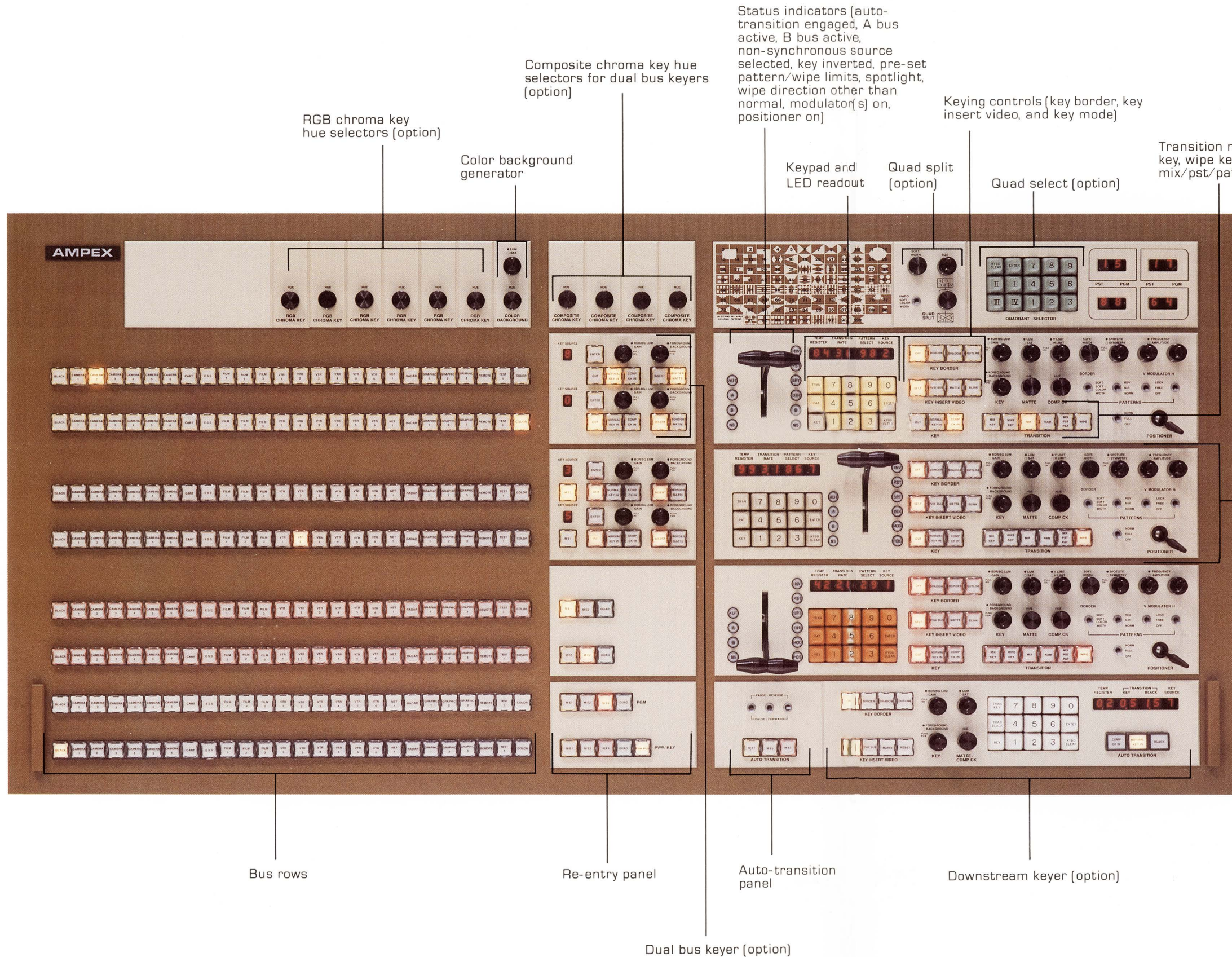
Auto-Transition: Auto-transitions are standard for each M/E on the 4000 Series. This assures you of smooth transitions that can be precisely controlled for a truly professional production. All transitions are measured in seconds, not frames, for added operating ease and less confusion. Each auto-transition can be individually programmed, and all transitions may be paused, continued or reversed as the situation or effect demands.
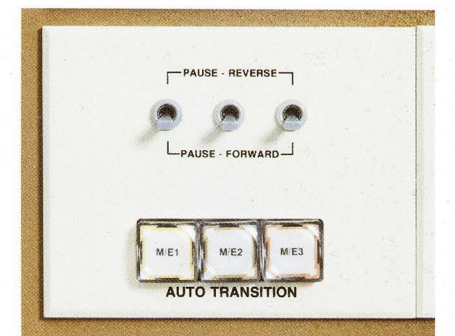
Edit Control: Because the 4000 Series control panel has no video in it, and control is sent via digital data to the electronics, the 4000 Series is readily adaptable to control by most of the electronic editing systems currently available. This includes control of up to 16 crosspoints, and any or all push-button activated functions, as well as all keyboard functions. This extends the 4000's unique power and flexibility to meet all the demanding challenges of post-production applications.

Full manual control, however, is still available, even while the 4000 Series is interfaced to and controlled by the editor.

The 4000 Series: What you do with it is limited only by your imagination.

RGB chroma key
hue selectors (option)

Composite chroma key hue
selectors for dual bus keyers
(option)

Color background
generator

Status indicators (auto-
transition engaged, A bus
active, B bus active,
non-synchronous source
selected, key inverted, pre-set
pattern/wipe limits, spotlight,
wipe direction other than
normal, modulator(s) on,
positioner on)

Keying controls (key border, key
insert video, and key mode)

Keypad and
LED readout

Quad split
(option)

Quad select (option)

Transition mode selectors (mix
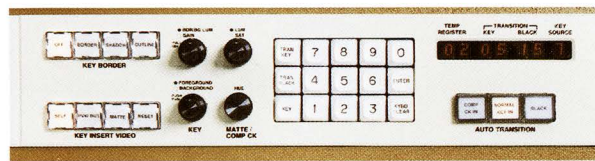key, wipe key, mix, nam,
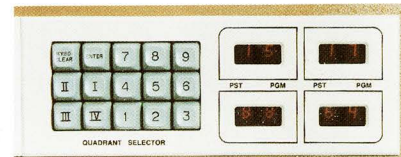mix/pst/pat, and wipe)

Function Module

The 4000 Series Switcher's Function
Module contains a keypad and its
associated LED readout, the fader, status
indicators, M/E keying controls, transition
mode selectors, M/E color generator
controls, pattern limit controls, pattern
border controls, pattern symmetry
control, modulation controls, positioner
and positioner control, and M/E composite
keyer hue control.

Bus rows

Re-entry panel

Auto-transition
panel

Downstream keyer (option)

Dual bus keyer (option)

The 4000 Series: A wide choice of options and accessories.

Downstream Keyer: Offers automatic transition for both keys and master fade to black. It provides keyboard control of 10 sources (including an additional external source not available on the M/Es) and automatic transition control. The Downstream Keyer genlocks independently to the program bus so that even non-synchronous sources can be smoothly faded to black. The Downstream Keyer is also available with pulse outputs suitable for driving a character generator so that you can even key over a non-synchronous signal.

Quad Split: The individual size and aspect ratio of each quadrant is fully variable. Quadrants may also be diagonal and even then the quadrant sizes are fully adjustable. Three border choices are available with variable width, softness and color control.
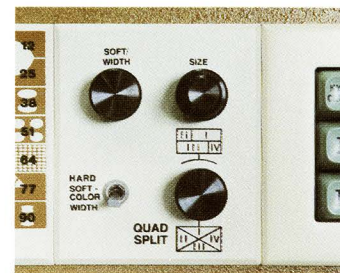
Quadrant Selector for Quad Split: This option doubles the number of video sources available to the Quad Split. And it allows any bus video from Buses 1A, 1B, 2A, 2B and the preview bus to be placed in any of the quadrants. M/E 1 and M/E 2
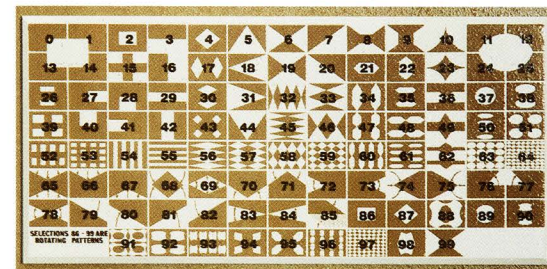
outputs, as well as an external video source, may also appear in any of the quadrants. This option also permits quadrant video sources to be pre-set and entered whenever and wherever you desire. All of this is accomplished quickly and competently via the 4000 Series' keyboard controls.

Bi-Level Linear RGB Chroma Keyer: Up to four are available on the 4000-E and up to six on the 4000-H, A and L models.

Linear Key Border Generator/Composite Chroma Keyer: In addition to providing an exceptionally high quality encoded chroma key, this option allows keys to be bordered with adjustable border luminance. It also allows drop shadows and colored outlines. Encoded chroma key is hard to distinguish from high-quality RGB keys.

Pattern Extender for 100 Patterns: With the 4000 Series, 65 patterns are standard. Thirty-five additional patterns also are available for use in the system (including rotary and rotating patterns). This option may be installed in any or all M/E pattern systems at any time.

In-Line Dual Bus Keyer Upstream of Mix/Mix Effects✻: Provides all the keying power and flexibility needed to meet today's teleproduction operations.

Processed External Key Input: Allows full capability character generators to be fed to the phantom buses.

Aux Buses✻: Available with Audio Follow Video and Audio Breakaway. Includes M/E re-entries. Up to 7

aux buses may be installed, depending on the switcher model involved. Two video only aux buses are prewired standard for easy field installation.

Editing Interface✻: Provides extensive control of the 4000 Series by electronic editing systems.

Digital Effects Interface✻: Allows the 4000 Series to be used with and control any digital effects unit currently available on the market.
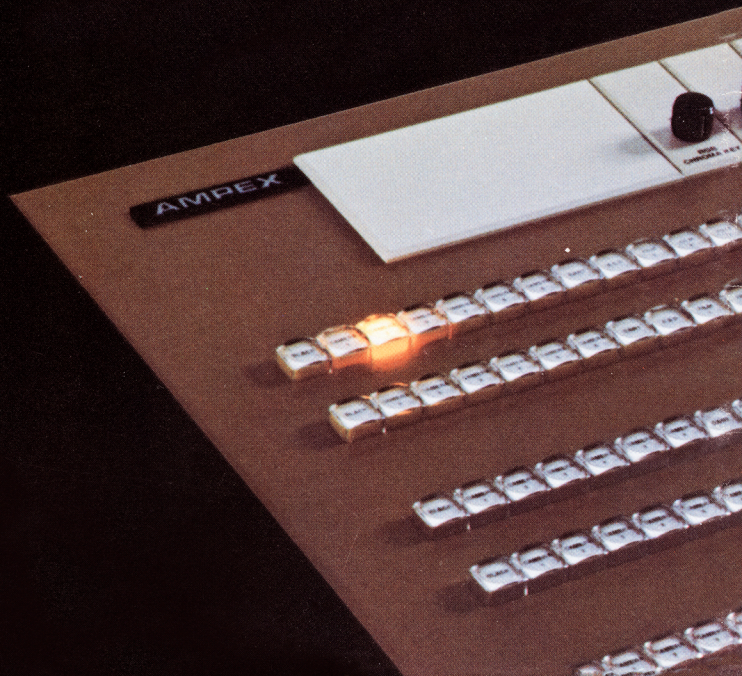
✻Factory installed

4000 Series Model Configurations

MODEL NUMBER	ACTIVE INPUTS	PREWIRED INPUTS	TOTAL ACTIVE	EXPANDABLE TO	OUTPUT BUSES	NUMBER OF FUNCTION MODULES
H-1	24	–	26	–	8	3
H-2	20	4	22	26	8	3
H-3	16	8	18	26	8	3
A-1	24	–	26	–	6	2
A-2	20	4	22	26	6	2
A-3	16	8	18	26	6	2
L-1	16	–	18	–	6	2
L-2	12	4	14	18	6	2
E-1	16	–	18	–	4	1
E-2	12	4	14	18	4	1

Standard models of the Ampex 4000 Series are made with four to eight buses and 12, 16, 20, or 24 inputs plus color black and color background. Up to seven auxiliary buses also may be prewired for future expansion. Each 4000 system arrives at the customer prewired and pretested for all field installable options. Options fit nearly all models,

allowing the simplest systems to attain a very high level of creative video control and flexibility.

The Ampex 4000 Series family is designed to give any teleproduction crew a competitive edge and a higher degree of creative possibilities, yet still be logical, straightforward and simple to control.