

EP4000 EMULATING PROGRAMMER

FEATURES:

- Software personality programming/emulating.
- Expandable to cover bipolar PROMs with the BP4 slave.
- Complementary with the P4000 8-gang production programmer.
- Normally powered down programming socket.
- 4k x 8 data RAM for emulating up to the 2732/2532 without the RAM capacity limitations of other machines.
- Buffered tri-state simulator cable for EPROM/ROM emulation automatically configured by the device selector.
- VDU output for memory map display (TV or monitor).
- Built-in LED hex status, address and data display.
- Powerful editing features including block or byte move, search, insert, delete, shift, copy, program, highlight etc.
- Full travel, double function, 28-key keypad.
- Extra 1k x 8 scratchpad RAM for block moving.
- Comprehensive input/output—TTL and RS232 serial port, 20mA current loop, bidirectional, handshake, strobed, parallel port, cassette in/out, printer O/P and DMA.
- Spare internal 4k x 8 EPROM socket for customer programs.
- Standard 24-month warranty and back-up service.

Modes of Operation:

Stand Alone Programmer

The built-in programmer is configured by software changes, for the required device type, using the device selector. It automatically self-tests, blank checks, programs and verifies. EPROMs may be verified, blank checked, block programmed or copied into the data RAM for EPROM duplication as required.

EPROM/ROM Simulator

The simulator cable is plugged into the external host system. The DMA key isolates the data RAM from the internal circuit, disables the internal microprocessor and enables the simulator tri-state buffers. The host system then sees the EP4000 as an EPROM/ROM of the type defined by the device selector switch.

The external system can then access and run the program in the data RAM. Depressing the DMA key again then isolates the external system, so that the data in the RAM may be altered, and manipulated using the key functions. Each new program can then be loaded onto cassette for fast, easy retrieval, or burnt into EPROM for use by the external system, independent of the EP4000. Read and write strobe lines are also available for DMA data transfers, if the EP4000 is to be used as a slave programmer for large external systems.

In both cases, the VDU output will show, on TV or monitor, a memory map of the contents of the RAM, EPROM socket or the scratchpads. This is displayed as a page of 512 contiguous memory locations. Any one of eighteen pages can be called and displayed. Two cursors are available for byte and block definition for entry, move, store, match, program, in conjunction with the four cursor keys.

The built-in hex display shows the address and data of either cursor, and the system status (e.g. cassette in/out, program pass/fail information, page number etc.)



P4000

PRODUCTION PROGRAMMER



FEATURES:

- Software personality changes by device selector allowing programming of the 2704/2708/2716 triple rail EPROMs and the 2508/2758/2516/2716/2532/2732 single rail EPROMs, all in one compact unit.
- This unit provides simple, reliable programming of up to 8 EPROMS simultaneously.
- All sockets (master and copy) are powered down until a read or programming operation is performed.
- The master socket is completely isolated from the programming voltages.
- Independent blank check and verify of the copy sockets.
- Status indicators for all functions.
- Complementary with the EP4000 emulator/programmer.
- Standard 24-month warranty and back-up service.

Operation:

The P4000 has been designed for ease of operator use.

A single 'Program' key starts the self check — blank check — program — verify sequence. Independent blank check and verify controls are provided, along with mode, pass/fail indicator for each copy socket and a sounder to signal a correct key command and the end of a programming run.



EP4000 EMULATOR PROGRAMMER

Physical.

Keypad — 28 full travel keys, colour grouped for ease of use.

Display — Large 8 digit, 7 segment for hex read-out.

Case — Tough, 2 tone vacuum-formed.

Size — L 13½ inch x W 10 inch x H 5½ inch.

Power — 110/240V a.c. ± 10%, 50/60Hz.

Memory.

4k x 8 Buffer RAM, & additional block store RAM of 1k x 8. 128 byte scratchpad RAM.

4k x 8 monitor ROM.

4k x 8 socket for user EPROMs.

Editing Functions.

Insert/delete in RAM byte at cursor position.

Insert/delete in RAM block/screen page.

Displacement calculation for jumps etc.

Clear RAM/Block/Scratchpad.

Match byte or block in RAM/EPROM.

Read RAM or EPROM at any address.

Full 4 key cursor control.

Store byte or block.

Shift RAM byte or block.

Screen page selection (0-18).

Execute program at RAM/EPROM/block, or any defined address.

Programming Functions.

Blank check EPROM with automatic checksum and on-screen highlighting of discrepancy bytes.

Copy EPROM into data RAM with automatic checksum. (RAM is continuously checked for power induced corruption of data.)

Program EPROM — with RAM data following the self test — blank check — program — verify sequence.

Block program EPROMs — allows part programming.

Verify EPROM — checks data in EPROM is identical with RAM data. Automatic checksum, with on-screen discrepancy byte highlighting.

Interfaces.

All interfaces are controlled by the keypad.

TTL level, RS232 and 20mA loop serial ports.

8 bit parallel handshake port.

High speed cassette in/out.

Direct Memory Access for fast data transfers and EPROM emulation.

Video and modulated video for memory map display on TV or monitor.

Device Selector.

8 position rotary switch, software polled for software personality changes for emulating/programming any of the 2704/2708/2716(III)/2508/2758/2516/2716(I)/2532/2732 EPROMs.

An 'External' position is available for external programming slaves, e.g. the BP4 Bipolar PROM Programmer.

P4000 PRODUCTION PROGRAMMER

Physical.

Rugged portable unit.

Size: L 13½ inch x W 10 inch x H 5½ inch.

Power Requirement: 110/240V a.c., 50/60Hz.

Full travel operation keys.

LED status indicators for all functions.

Device selector allows programming of:

2704/2708/2716 triple rail EPROMs, 2508/2758/2516/2716/2532/2732 single rail EPROMs.

Programs up to 8 EPROMs simultaneously.

Key Functions/Status Indicators.

Program

Verify

Blank Check

Reset

Power on

Mode A/Mode B for future options.

Pass/Fail Indicator for each copy socket as well as a sounder to signal end of programming cycle.

24-month warranty.

STANDARD OPTIONS

EPROM Erasers.

Model UV141 — 14 EPROM capacity, safety interlock, presettable 5-50 minute electronic timer.

Typical erase time — 20min. for 2708/2716.

Model UV140 — similar to UV141 but without timer.

*Model UV142 — Fast version of the UV141.

Simulator adaptors.

SSC — standard 24-pin simulator cable for emulation of 2704 to 2532.

MESA-4 — Multi-EPROM Simulator Adaptor for emulation of 4 x 2708/2508/2758 or 2 x 2716/2516.

Video Monitor.

Model VM10 — low cost 10inch black and white monitor providing a sharp stable picture.

External controls — horizontal/vertical hold, brightness, contrast, power on/off, focus, vertical picture height.

Paper Tape Reader.

*PTR150 — low cost photoelectric paper tape reader capable of reading 150 characters/second.

Instant adjustment for 5, 6, 7 or 8 level tape. 8 bit parallel data transfer.

* Available December, 1980.

Manufactured in ENGLAND. Specification/price subject to change without notice.



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