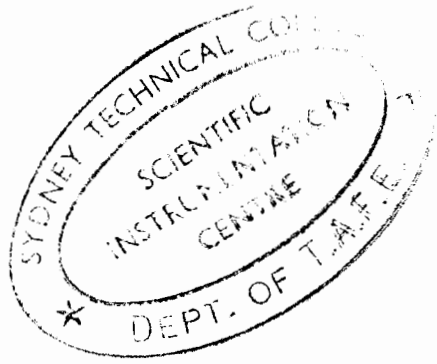
HP 12892B

Memory Protect

installation manual



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INTRODUCTION

This manual provides installation instructions for the HP 12892B Memory Protect, which is an accessory for the HP 1000 Computers. Additional information for this accessory, which provides memory, I/O, and infinite indirect addressing protection, is provided in the computer installation and reference manuals.

JUMPER CONFIGURATIONS

The memory protect printed-circuit assembly (PCA) includes a jumper block (U21) that accommodates six functional jumpers and space for two unused (spare) jumpers. (See figure 1.) When the memory protect PCA is shipped separately, the jumpers are configured for normal operation as follows (the functions of these jumpers are described in table 1):

JUMPER	POSITION
RME	OUT
SEL 1	OUT
INT	IN
JSB	IN
MX	IN*
HLTPE	OUT

*For HP M-Series computers (HP 2108/2112), leave the MX jumper installed; for E-Series and F-Series computers, remove the MX jumper.

INSTALLATION

Install the memory protect PCA in the computer as follows:

a. On operator panel, set key-operated switch to STANDBY.

b. Loosen the quarter-turn fasteners on operator panel and lower it to the access position.

c. Remove memory PCA retainer from memory PCA cage.

d. Insert memory protect PCA, part no. 12892-60003, in memory PCA cage slot 111.

e. Replace memory PCA retainer and operator panel.

CHECKOUT

After installing the memory protect PCA, verify proper operation by performing the memory protect diagnostic test as described in the *Diagnostic Reference Manual*. Part numbers for the diagnostic test are as follows:

DIAGNOSTIC*	MANUAL	PAPER TAPE
Memory Protect/ Parity Error Test	12892-90005	12892-16001

If the diagnostic test is completed without an error halt, the memory protect PCA is performing correctly. If the diagnostic test indicates an error halt, notify your nearest HP Sales and Service Office. (A list of HP Sales and Service Offices is given in the appropriate computer *Reference Manual* and *Installation and Service Manual*.

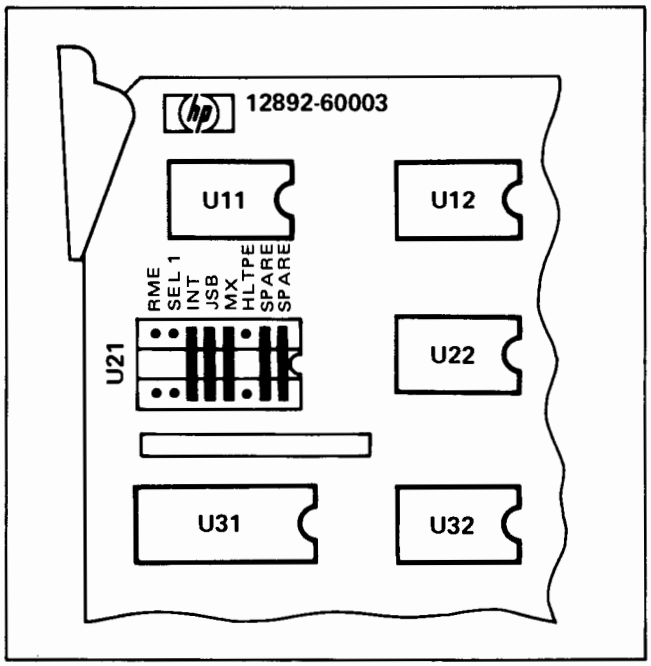

Figure 1. Jumper Block Configuration

*The absolute binary code for this diagnostic is contained on one or more media (e.g., paper tape, cartridge tape, disc, and magnetic tape). The binaries also exist on single as well as multiple files. For the current date code(s) associated with these media, refer to appendix A in the *HP 2000 Diagnostic Configurator Manual*, part no. 02100-90157, dated August 1976 or later.

Table 1. Memory Protect Jumper Functions

JUMPER	DESCRIPTION
RME	(Reset DMS Memory Expansion Module) With the Memory Protect enabled and the computer issues IAK (Interrupt Acknowledge) in response to an IRQ (Interrupt Request), Memory Protect is turned off and the Memory Expansion Module (MEM) is switched automatically to the System Map. If an I/O instruction is in the trap cell allocated to the interrupting device, Memory Protect is turned back on and asserts the RME signal. The RME signal controls the following: RME = IN = MEM returns to same map in use prior to IAK being issued. RME = OUT = MEM remains in System Map. NOTE Jumper W4 on Memory Expansion Module (12731-60001) *must* be configured to react to the RME signal. That is, if RME jumper is IN, MEM jumper W4 must be installed in position "B"; if RME jumper is OUT, MEM jumper W4 must be installed in position "A".
SEL 1	(Select Code 01) Assuming that Memory Protect is turned on, the SEL 1 jumper controls the following: SEL 1 = IN = Allows any I/O instruction to any select code without causing a Memory Protect violation. Maintains all other Memory Protect features. SEL 1 = OUT = Allows I/O instructions only to select code 01. I/O instructions to any other select code will cause a Memory Protect violation.
INT	(Interrupt) INT = IN = Interrupt System enabled after three levels of indirect addressing have been executed. This occurs whether or not Memory Protect is enabled. INT = OUT = Interrupt System and Memory Protect enabled by an STC 05 instruction or enabled automatically after three levels of indirect addressing have been executed.
HLTPE	(Halt on Parity Error) If CPU internal switch A1S1 is in the HLT PE (M-Series) or the HLT (E-Series and F-Series) position, the HLTPE jumper controls the following: HLTPE = IN = Parity Violation register not clocked when a parity error occurs. HLTPE = OUT = Parity Violation register clocked when a parity error occurs. Contents of register can be accessed by executing an LIA/B 05 instruction. NOTE If the Dynamic Mapping System is installed and enabled, the contents of the Violation register will be the *logical* address and not necessarily the *physical* address. If CPU internal switch A1S1 is in the INT-IGNORE position, the position of the HLTPE jumper is irrelevant.
JSB	(Jump to Subroutine) JSB = IN = Will not allow a JSB instruction to reference any memory location below the fence *except* locations 0000 and 0001 (A- and B-registers, respectively). Will not allow a JMP instruction to reference any memory location below the fence, *including* locations 0000 and 0001. JSB = OUT = Will not allow a JSB or a JMP instruction to reference any memory location below the fence, *including* locations 0000 and 0001.
MX	(Computer Compatibility) MX = IN = HP M-Series Computer (2108/2112) MX = OUT = HP E-Series (2109/2113) or F-Series (2111/2117)