



## AlphaServer 1000A Pedestal–Rackmount–Cabinet

V97-1.0—1 May 1997

DIGITAL Systems and Options Catalog

### Product Description

The AlphaServer 1000A is an Alpha microprocessor server, available in 333 Mhz and 400 Mhz versions with 2MB ECC cache, and a 500 Mhz version with 8 MB ECC cache. All are available in Pedestal and Rackmount systems with a choice of three popular operating systems: DIGITAL UNIX, OpenVMS, and Microsoft Windows NT Server. The AlphaServer 1000A offers the following high-reliability features: heat sensor, fan failure and power supply sensors, and ECC memory. Integrated on system motherboard are fast wide single-ended SCSI-2 controller, diskette controller, two serial ports, one parallel port, and keyboard and mouse controller.

Advanced server management features are provided with all AlphaServer 1000A shipments via the bundled ServerWORKS Manager kit. The kit provides remote management capability through Simple Network Management Protocol agents (SNMP) for Windows NT, DIGITAL UNIX and OpenVMS. The management console software runs on any Windows NT or Windows 95 PC. The SNMP agents required to manage the server ship with the TCP/IP services of the operating system (with the exception of Windows NT which ships with the ServerWORKS kit). The SNMP agents collect critical server information including system status, I/O information, storage and disk information and network status information. Thresholds can be set to monitor key server events and alarms are forwarded to the ServerWORKS console. ServerWORKS Manager V2.0 includes remote pager support for alarm notification. In addition to ServerWORKS, DIGITAL includes key third party software applications including DIGITAL Power Management Software for Alpha provided by EXIDE, and application / database management software through BMC software's PATROL family of products.

**The AlphaServer 1000A Pedestal System** offers up to 10 internal storage devices including a floppy diskette drive, a CD-ROM, one additional 5.25-inch removable media bay, and seven hot swap StorageWorks wide or narrow disk drives. The system supports up to 30 GB of internal storage with seven 4.3 GB disks.

**The AlphaServer 1000A Rackmount System** offers up to 6 internal storage devices including a floppy diskette drive, a CD-ROM, one additional 5.25-inch removable media bay, and three wide and/or narrow disk drives. The system supports up to 12.9 GB of internal storage with three 4.3 GB disks.

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## Step 1—AlphaServer 1000A Pedestal Systems

- Windows NT Packaged systems
  - North American variants include Windows NT license, media (CD-ROM) kit North American English
  - Selection of language specific Windows NT license, media (CD-ROM) kit is **mandatory** for all non-North American variants, see Step 9.
- DIGITAL UNIX and OpenVMS Packaged systems include factory installed (FIS) software on hard disk drive.
- Uninterruptable Power Supplies are available; see UPS Information following System Specifications.
- Options ordered that are factory installable, will be factory installed unless specified as **spares**.

### Pedestal Systems include

- Alpha microprocessor 21164
  - 333 MHz CPU with 2 MB ECC onboard cache, or
  - 400-MHz CPU with 2 MB ECC onboard cache, or
  - 500-MHz CPU with 8 MB ECC onboard cache
- Pedestal enclosure with:
  - Nine expansion slots: Seven PCI, and two EISA slots
  - Integral Fast Wide Single-Ended SCSI-2 controller supports wide and narrow devices
  - 16 SIMM memory slots support 4 memory options
  - 10 storage slots:
    - One diskette drive slot
    - One CD-ROM drive slot
    - One additional removable media slot
    - Seven StorageWorks wide and/or narrow hard drive slots
  - 450-Watt self-sensing, self-switching (120/240V, 60/50Hz) power supply
  - Two serial ports, support full duplex asynchronous modem control
  - One bi-directional enhanced parallel port
  - PS/2 style keyboard port and mouse port
- 1.44 MB diskette drive in dedicated slot
- 3-button mouse
- North American variants include 120V power cord (North America, Japan). Mandatory selection of country-specific power cord for all non-North American variants, see Step 10.
- English language documentation. Certain language selections are available; see Step 10.
- EISA Configuration Utility (ECU)
- Integrated Advanced Server Management features, including ServerWorks Manager kit
- Hardware Warranty: Three-year on-site\*
- Software Warranty:\*
  - 90-day SPD conformance with advisory telephone support for DIGITAL UNIX and OpenVMS
  - Warranty on Microsoft's Windows NT Server 4.0 is conformance to the written material accompanying the software for a period of ninety days
- Windows NT Server 4.0 plus 10-client access license, media (CD-ROM) kit **or**†
- DIGITAL UNIX Unlimited User license, Server Extension license, Internet AlphaServer System Software kit, **or**
- OpenVMS base license with System Manager license, Enterprise Integrated Package (EIP)

\* Service upgrades are available; see Step 12, Hardware and Software Supplemental Services

† Windows NT language specific media kit is **mandatory** for non-North American variants; see Step 9.

### Pedestal Packaged Systems include

- PCI-based Fast 100 Ethernet (Twisted Pair) —uses one PCI slot
- 600 MB CD-ROM—uses one removable media slot
- One wide hard disk drive, see below
- One memory option, see below
- North American Windows NT and DIGITAL UNIX variants include a 101-key, PC style U.S. English keyboard.
- North American OpenVMS variants include a 108 key, VT style U.S. English keyboard.
- Select country-specific keyboard for all non-U.S. variants, see Step 10.

**Note:** Selection of graphics option is **mandatory** for Windows NT Pedestal Packaged Systems

5/333 Pedestal Packaged Systems								
Order Number	Operating System	O/S Media	Power cord	Keyboard	Memory	Disk	Graphics	Monitor
PB76B-AA	Windows NT	Included*	120 V	Included	64 MB	1.05 GB	Mandatory	Required
PB76B-AB	Windows NT	Mandatory	Mandatory	Required	64 MB	1.05 GB	Mandatory	Required
PB76B-AD	Windows NT	Included*	120 V	Included	256 MB	1.05 GB	Mandatory	Required
PB76B-AE	Windows NT	Mandatory	Mandatory	Required	256 MB	1.05 GB	Mandatory	Required

**Step 1—AlphaServer 1000A Pedestal Systems (continued)**

5/333 Pedestal Packaged Systems								
Order Number	Operating System	O/S Media	Power cord	Keyboard	Memory	Disk	Graphics	Monitor
PB76B-FE	DIGITAL UNIX	FIS	120 V	Included	64 MB	2.1 GB	Recommended	Recommended
PB76B-FF	DIGITAL UNIX	FIS	Mandatory	Recommended	64 MB	2.1 GB	Recommended	Recommended
PB76B-FG	DIGITAL UNIX	FIS	120 V	Included	256 MB	2.1 GB	Recommended	Recommended
PB76B-FH	DIGITAL UNIX	FIS	Mandatory	Recommended	256 MB	2.1 GB	Recommended	Recommended
PB76B-ME	OpenVMS	FIS	120 V	Included	64 MB	2.1 GB	Recommended	Recommended
PB76B-MF	OpenVMS	FIS	Mandatory	Recommended	64 MB	2.1 GB	Recommended	Recommended
PB76B-MG	OpenVMS	FIS	120V	Included	256 MB	2.1 GB	Recommended	Recommended
PB76B-MH	OpenVMS	FIS	Mandatory	Recommended	256 MB	2.1 GB	Recommended	Recommended

5/400 Pedestal Packaged Systems								
Order Number	Operating System	O/S Media	Power cord	Keyboard	Memory	Disk	Graphics	Monitor
PB78B-AA	Windows NT	Included*	120 V	Included	128 MB	2.1 GB	Mandatory	Required
PB78B-AB	Windows NT	Mandatory	Mandatory	Required	128 MB	2.1 GB	Mandatory	Required
PB78B-AC	Windows NT	Included*	120 V	Included	256 MB	2.1 GB	Mandatory	Required
PB78B-AD	Windows NT	Mandatory	Mandatory	Required	256 MB	2.1 GB	Mandatory	Required
PB78B-FE	DIGITAL UNIX	FIS	120 V	Included	128 MB	2.1 GB	Recommended	Recommended
PB78B-FF	DIGITAL UNIX	FIS	Mandatory	Recommended	128 MB	2.1 GB	Recommended	Recommended
PB78B-FG	DIGITAL UNIX	FIS	120 V	Included	256 MB	2.1 GB	Recommended	Recommended
PB78B-FH	DIGITAL UNIX	FIS	Mandatory	Recommended	256 MB	2.1 GB	Recommended	Recommended
PB78B-ME	OpenVMS	FIS	120 V	Included	128 MB	2.1 GB	Recommended	Recommended
PB78B-MF	OpenVMS	FIS	Mandatory	Recommended	128 MB	2.1 GB	Recommended	Recommended
PB78B-MG	OpenVMS	FIS	120 V	Included	256 MB	2.1 GB	Recommended	Recommended
PB78B-MH	OpenVMS	FIS	Mandatory	Recommended	256 MB	2.1 GB	Recommended	Recommended

5/500 Pedestal Packaged Systems								
Order Number	Operating System	O/S Media	Power cord	Keyboard	Memory	Disk	Graphics	Monitor
PB79B-AA	Windows NT	Included*	120 V	Included	128 MB	4.3 GB	Mandatory	Required
PB79B-AB	Windows NT	Mandatory	Mandatory	Required	128 MB	4.3 GB	Mandatory	Required
PB79B-AC	Windows NT	Included*	120 V	Included	256 MB	4.3 GB	Mandatory	Required
PB79B-AD	Windows NT	Mandatory	Mandatory	Required	256 MB	4.3 GB	Mandatory	Required
PB79B-FA	DIGITAL UNIX	FIS	120 V	Included	128 MB	4.3 GB	Recommended	Recommended
PB79B-FB	DIGITAL UNIX	FIS	Mandatory	Recommended	128 MB	4.3 GB	Recommended	Recommended
PB79B-FC	DIGITAL UNIX	FIS	120 V	Included	256 MB	4.3 GB	Recommended	Recommended
PB79B-FD	DIGITAL UNIX	FIS	Mandatory	Recommended	256 MB	4.3 GB	Recommended	Recommended
PB79B-MA	OpenVMS	FIS	120 V	Included	128 MB	4.3 GB	Recommended	Recommended
PB79B-MB	OpenVMS	FIS	Mandatory	Recommended	128 MB	4.3 GB	Recommended	Recommended
PB79B-MC	OpenVMS	FIS	120 V	Included	256 MB	4.3 GB	Recommended	Recommended
PB79B-MD	OpenVMS	FIS	Mandatory	Recommended	256 MB	4.3 GB	Recommended	Recommended

\* Windows NT Server license, media (CD-ROM) kit North American English.

KEY: Mandatory items **must** be on purchase order at initial order acceptance.

Required items are essential for full system operation.

Recommended items enhance system functionality.

FIS = Factory Installed Software

## Step 1a—AlphaServer 1000A Rackmount Systems

- .. Windows NT Packaged systems
  - North American variants include Windows NT license, media (CD-ROM) kit North American English
  - Selection of language specific Windows NT license, media (CD-ROM) kit is **mandatory** for all non-North American variants, see Step 9.
- .. DIGITAL UNIX and OpenVMS Packaged systems include factory installed (FIS) software on hard disk drive.
- .. Uninterruptable Power Supplies are available; see UPS Information following System Specifications.
- .. Options ordered that are factory installable, will be factory installed unless specified as **spares**.

**Note:** AlphaServer 1000A rackmount systems do **not** support dual power supply configurations

### Rackmount Systems include

- .. Alpha microprocessor 21164
  - 333-MHz CPU with 2 MB ECC onboard cache, or
  - 400-MHz CPU with 2 MB ECC onboard cache, or
  - 500-MHz CPU with 8 MB ECC onboard cache
- .. Rackmount enclosure with:
  - Seven PCI slots  
Two EISA slots
  - Integral Fast Wide Single-Ended SCSI-2 controller supports wide and narrow devices
  - 20 SIMM memory slots support 4 memory options
  - 6 storage slots:
    - One diskette drive slot
    - One CD-ROM drive slot
    - One additional removable media slot
    - Three fixed wide and/or narrow hard disk drive slots
  - 450-Watt self-sensing, self-switching (120/240V, 60/50Hz) power supply
  - Two serial ports, support full duplex asynchronous modem control
  - One bi-directional enhanced parallel port
  - PS/2 style keyboard port and mouse port
- .. 1.44 MB diskette drive in dedicated slot
- .. Three-button mouse
- .. 15-foot power cord (120V/240V as appropriate)
- .. Rackmount hardware (shelf and rails)
- .. English language documentation kit.
- .. EISA Configuration Utility (ECU)
- .. Integrated Advanced Server Management features, including ServerWorks Manager kit
- .. Hardware Warranty: Three-year on-site<sup>1</sup>
- .. Software Warranty:\*
  - 90-day SPD conformance with advisory telephone support for DIGITAL UNIX and OpenVMS
  - Warranty on Microsoft's Windows NT Server 4.0 is conformance to the written material accompanying the software for a period of ninety days
- .. Windows NT Server 4.0 plus 10-client access license, media (CD-ROM) kit **or**†
- .. DIGITAL UNIX Unlimited User license, Server Extension license, **or**
- .. OpenVMS base license with System Manager license, Enterprise Integrated Package (EIP)

<sup>1</sup> Service upgrades are available; see Step 12, Hardware and Software Supplemental Services

<sup>2</sup> Windows NT language specific media kit is **mandatory** for non-North American variants; see Step 9.

### Rackmount Packaged Systems include

- .. PCI-based Fast 100 Ethernet (Twisted Pair)—uses one PCI slot
- .. One wide hard disk drive, see below
- .. One memory option, see below
- .. 600 MB CD-ROM—uses one removable media slot
- .. North American Windows NT and DIGITAL UNIX variants include a 101-key, PC style U.S. English keyboard.
- .. North American OpenVMS variants include a 108 key, VT style U.S. English keyboard.
- .. Select country-specific keyboard for non-North American variants, see Step 10.
- .. Systems include 120V or 240V power cord depending on variant chosen.
- .. Cabinet enclosure available separately, see Step 11.

**Note:** Selection of graphics option is **mandatory** for Windows NT Rackmount Packaged Systems

5/333 Rackmount Packaged Systems								
Order Number	Operating System	O/S Media	Power cord	Keyboard	Memory	Disk	Graphics	Monitor
PB76P-AA	Windows NT	Included*	120 V	Included	64 MB	1.05 GB	Mandatory	Required
PB76P-AB	Windows NT	Mandatory	240 V	Required	64 MB	1.05 GB	Mandatory	Required
PB76P-AC	Windows NT	Included*	120 V	Included	256 MB	1.05 GB	Mandatory	Required
PB76P-AD	Windows NT	Mandatory	240 V	Required	256 MB	1.05 GB	Mandatory	Required

**Step 1—AlphaServer 1000A Rackmount Systems (continued)****5/333 Rackmount Packaged Systems**

Order Number	Operating System	O/S Media	Power cord	Keyboard	Memory	Disk	Graphics	Monitor
PB76P-FE	DIGITAL UNIX	FIS	120 V	Included	64 MB	2.1 GB	Recommended	Recommended
PB76P-FF	DIGITAL UNIX	FIS	240 V	Recommended	64 MB	2.1 GB	Recommended	Recommended
PB76P-FG	DIGITAL UNIX	FIS	120 V	Included	256 MB	2.1 GB	Recommended	Recommended
PB76P-FH	DIGITAL UNIX	FIS	240 V	Recommended	256 MB	2.1 GB	Recommended	Recommended
PB76P-ME	OpenVMS	FIS	120 V	Included	64 MB	2.1 GB	Recommended	Recommended
PB76P-MF	OpenVMS	FIS	240 V	Recommended	64 MB	2.1 GB	Recommended	Recommended
PB76P-MG	OpenVMS	FIS	120 V	Included	256 MB	2.1 GB	Recommended	Recommended
PB76P-MH	OpenVMS	FIS	240 V	Recommended	256 MB	2.1 GB	Recommended	Recommended

**5/400 Rackmount Packaged systems**

Order Number	Operating System	O/S Media	Power cord	Keyboard	Memory	Disk	Graphics	Monitor
PB78P-AA	Windows NT	Included*	120 V	Included	128 MB	2.1 GB	Mandatory	Required
PB78P-AB	Windows NT	Mandatory	240 V	Required	128 MB	2.1 GB	Mandatory	Required
PB78P-AC	Windows NT	Included*	120 V	Included	256 MB	2.1 GB	Mandatory	Required
PB78P-AD	Windows NT	Mandatory	240 V	Required	256 MB	2.1 GB	Mandatory	Required
PB78P-FE	DIGITAL UNIX	FIS	120 V	Included	128 MB	2.1 GB	Recommended	Recommended
PB78P-FF	DIGITAL UNIX	FIS	240 V	Recommended	128 MB	2.1 GB	Recommended	Recommended
PB78P-FG	DIGITAL UNIX	FIS	120 V	Included	256 MB	2.1 GB	Recommended	Recommended
PB78P-FH	DIGITAL UNIX	FIS	240 V	Recommended	256 MB	2.1 GB	Recommended	Recommended
PB78P-ME	OpenVMS	FIS	120 V	Included	128 MB	2.1 GB	Recommended	Recommended
PB78P-MF	OpenVMS	FIS	240 V	Recommended	128 MB	2.1 GB	Recommended	Recommended
PB78P-MG	OpenVMS	FIS	120 V	Included	256 MB	2.1 GB	Recommended	Recommended
PB78P-MH	OpenVMS	FIS	240 V	Recommended	256 MB	2.1 GB	Recommended	Recommended

**5/500 Rackmount Packaged systems**

Order Number	Operating System	O/S Media	Power cord	Keyboard	Memory	Disk	Graphics	Monitor
PB79P-AA	Windows NT	Included*	120 V	Included	128 MB	4.3 GB	Mandatory	Required
PB79P-AB	Windows NT	Mandatory	240 V	Required	128 MB	4.3 GB	Mandatory	Required
PB79P-AC	Windows NT	Included*	120 V	Included	256 MB	4.3 GB	Mandatory	Required
PB79P-AD	Windows NT	Mandatory	240 V	Required	256 MB	4.3 GB	Mandatory	Required
PB79P-FA	DIGITAL UNIX	FIS	120 V	Included	128 MB	4.3 GB	Recommended	Recommended
PB79P-FB	DIGITAL UNIX	FIS	240 V	Recommended	128 MB	4.3 GB	Recommended	Recommended
PB79P-FC	DIGITAL UNIX	FIS	120 V	Included	256 MB	4.3 GB	Recommended	Recommended
PB79P-FD	DIGITAL UNIX	FIS	240 V	Recommended	256 MB	4.3 GB	Recommended	Recommended
PB79P-MA	OpenVMS	FIS	120 V	Included	128 MB	4.3 GB	Recommended	Recommended
PB79P-MB	OpenVMS	FIS	240 V	Recommended	128 MB	4.3 GB	Recommended	Recommended
PB79P-MC	OpenVMS	FIS	120 V	Included	256 MB	4.3 GB	Recommended	Recommended
PB79P-MD	OpenVMS	FIS	240 V	Recommended	256 MB	4.3 GB	Recommended	Recommended

\* Windows NT Server license, media (CD-ROM) kit North American English.

KEY: Mandatory items **must** be on purchase order at initial order acceptance.

Required items are essential for full system operation.

Recommended items enhance system functionality.

FIS = Factory Installed Software

## Step 1b—AlphaServer 1000A Cabinet Systems

### Cabinet Packaged Systems include

- .. AlphaServer 1000A Cabinet Systems ship with dual (2) H7600-xx cabinet power distribution units and the following power cords.
  - 120 V systems (H7600-AA) = 2 x 24A terminated with NEMA L5-30P (plugs) and require NEMA L6-20R (receptacles)
  - 240 V systems (H7600-DB) = 2 x 16A terminated with NEMA L6-20P (plugs) and require NEMA L6-20R (receptacles)
- .. H9A10 Cabinet Dimensions
  - Outside: 66.9-inches high, 23.62-inches wide, 33.8-inches deep
  - Usable internal rackmount: 59.5-inches high, 19-inches wide, 30.83-inches deep.

### 5/333 and 5/400 Cabinet Packaged Systems include

- .. Cabinet enclosure (H9A10 120 V or 240 V) with AlphaServer 1000A Rackmount Packaged System, **plus**
  - One BA36R-AF front-mounted StorageWorks shelf. **Note:** BA36R-AF StorageWorks wide shelf requires a Fast wide SCSI controller, SCSI disk drive, and SCSI cable, see Step 4b. Select SCSI devices for installation in BA36R-AF StorageWorks shelf from Step 4e.

5/333 Cabinet Packaged Systems	
<b>PB76R-AA*</b>	Windows NT Rackmount Packaged system (PB76P-AA)
<b>PB76R-AC</b>	Windows NT Rackmount Packaged system (PB76P-AB)
<b>PB76R-FA/FC</b>	DIGITAL UNIX Rackmount Packaged system (PB76P-FA/FB)
<b>PB76R-MA/MC</b>	OpenVMS Rackmount Packaged system (PB76P-MA/MB)

5/400 Cabinet Packaged Systems	
<b>PB78R-AA*</b>	Windows NT Rackmount Packaged system (PB78P-AA)
<b>PB78R-AC</b>	Windows NT Rackmount Packaged system (PB78P-AB)
<b>PB78R-FA/FC</b>	DIGITAL UNIX Rackmount Packaged system (PB78P-FA/FB)
<b>PB78R-MA/MC</b>	OpenVMS Rackmount Packaged system (PB78P-MA/MB)

\* Windows NT Server license, media (CD-ROM) kit North American English..

## Step 1c—PCI Option Slot Table

- .. Use table for options restricted to slots **0, 1 and 2 only**.

Order Number	Description	Max #	Restriction applies to
<b>KZPSC-AA</b>	One-port PCI-based RAID Controller	3	DIGITAL UNIX, OpenVMS, Windows NT
<b>KZPSC-BA</b>	Three port PCI-based RAID Controller	3	Windows NT only
<b>DJ-ML200-BA</b>	4 MB PCI Prestoserve option	1	DIGITAL UNIX
<b>DE500-XA</b>	PCI-based Fast Ethernet network interface card	3	DIGITAL UNIX, OpenVMS, Windows NT

## Step 2—Memory

- .. Packaged Systems include one 64 MB, 128 MB, or 256 MB memory kit.
- .. System supports up to four memory kits (each kit includes industry-standard SIMMs and ECC support).
- .. System supports maximum of 1 GB memory

<b>PB7MA-CB</b>	32 MB 70ns (8 MB SIMMs) memory kit
<b>PB7MA-CC</b>	64 MB 70ns (16 MB SIMMs) memory kit
<b>PB7MA-CD</b>	128 MB 70ns (32 MB SIMMs) memory kit
<b>PB7MA-CE</b>	256 MB 70ns ( 64 MB SIMMs) memory kit

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**Step 2a—Prestoserve Non-Volatile Random Access Memory (NVRAM)**

- .. Supported on DIGITAL UNIX systems **only**, maximum one Prestoserve option per system.

**DJ-ML200-BA**      PCI-based 4 MB PrestoServe I/O performance enhancement option

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**Step 3—Monitors**

- .. Windows NT systems require a graphics monitor to run **all** functions.
- .. EISA Configuration Utility (ECU) is accessible via the console port for DIGITAL UNIX and OpenVMS systems. Optional graphics capability is available. Select graphics adapter, monitor, and country specific keyboard for DIGITAL UNIX and OpenVMS systems if required.
- .. Graphics monitors other than those listed below can be used if compatible with graphics adapter included with system.

**Note:** Higher resolution available with optional EISA or PCI graphics adapters (see Step 5).

**SN-VRCX5-WA/W3/W4**      15" (13.9" viewable image size) Corporate Series auto-scan color monitor, flat square invar CRT, 0.28 mm dot pitch, VGA to 1024 x 768 @ 85 Hz, TCO 92, MPRII, Energy Star, attached video cable. -WA = Northern Hemisphere with 120 V power cord, -W3 = Northern Hemisphere without power cord. Select country specific power cords for -W3 Northern Hemisphere, and -W4 Southern Hemisphere variants.

**SN-VRTX7-WA/W3**      17" (16.0" viewable image size) Professional Series auto-scan color monitor, Trinitron CRT, 0.25 mm aperture grill pitch, VGA to 1280 x 1024 @ 75Hz, TCO 92, MPRII, Energy Star, HD15 male to male video cable. -WA = Northern Hemisphere with 120 V power cord, -W3 = Northern Hemisphere without power cord, SN-VRT17-W4 = Southern Hemisphere. Select country specific power cord for W3 and W4 variant.

**SN-VRCX1-WA/W3/W4**      21" (19.7" viewable image size) professional series auto-scan color monitor, Diamondtron CRT, 0.28 mm aperture grill pitch, VGA to 1600 x 1200 @ 75 Hz, TCO 92, MPRII, Energy Star, HD15 male to male video cable. -WA = Northern Hemisphere with 120 V power cord. -W3 = Northern Hemisphere without power cord. W4 = Southern Hemisphere without power cord. Select country specific power cord for W3 and W4 variants.

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**Step 4—Storage****Configuration rules for Pedestal Internal Storage**

- .. Integral Fast Wide Single Ended (FWSE) SCSI-2 controller supports maximum of seven wide and/or narrow devices in any combination of:
  - Two internal narrow 5.25-inch removable media devices
  - Six narrow or wide 3.5-inch hard disk drives in internal storage assembly
  - One external narrow storage device. Maximum external SCSI cable length cannot exceed .5 meters
- .. Pedestal enclosure supports ten storage devices: one dedicated diskette drive slot, two removable media slots, seven 3.5-inch internal hard disk drives.
- .. Pedestal system internal storage assembly is configured in single-bus mode and can be reconfigured in split bus mode.
- .. An additional SCSI-2 controller is required to support internal storage assembly if set for split-bus mode.

**Configuration rules for Rackmount Internal Storage**

- .. Integral Fast Wide Single Ended (FWSE) SCSI-2 controller supports maximum of five wide and/or narrow devices:
  - Two internal narrow 5.25-inch removable media devices.
  - Three narrow or wide 3.5-inch internal hard disk drives (each narrow drive ordered requires a wide to narrow SCSI adapter (PBXKP-BA)).
- .. Rackmount enclosure supports six storage devices: one dedicated diskette drive slot, two removable media slots, three 3.5-inch internal hard disk drives.

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**Step 4a—Internal Storage**

- .. Pedestal and Rackmount Packaged systems include:
  - 1.44 MB diskette drive in dedicated slot.
  - One CD-ROM drive
  - One 1.05 GB, 2.1 GB, or 4.3GB wide hard drive (see Step 1)

**Removable Media Devices**

<b>PBXR-DA</b>	600 MB 5.25 inch half-height 12 X CD-ROM drive (RRD46)
<b>PBXTZ-AA</b>	2.0 GB 5.25-inch half-height SCSI QIC tape drive (TZK11)
<b>PBXTL-DA</b>	8.0 GB 5.25-inch x 1.6-inch SCSI 4 mm DAT drive (TLZ09)

**Pedestal System Hard Disk Drives**

<b>RZ28D-VW</b>	2.1 GB 16-bit wide 7200 RPM 3.5 x 1" SCSI hard disk drive
<b>RZ29B-VW</b>	4.3 GB 16-bit wide 7200 RPM 3.5 x 1.6" SCSI hard disk drive

**Pedestal system internal SCSI Cable Kits**

<b>PB7HA-AA</b>	Includes 50 conductor cable from 8-bit narrow SCSI controller to internal storage assembly, cable from internal storage assembly to external bulkhead, and external terminator.
<b>PB7HA-BA</b>	Includes 68 conductor cable from 16-bit wide SCSI controller to internal storage assembly, cable from internal storage assembly to wide SCSI external bulkhead, jumper cable to put internal storage assembly into single bus mode, and external single-ended wide SCSI terminator.
<b>BC25V-1H</b>	Includes one 68 conductor cable from 16-bit wide SCSI controller to wide SCSI external bulkhead.

**Rackmount Hard Disk Drives—factory or field installed**

<b>PBXRW-JB</b>	2.1 GB 16-bit wide 7200 RPM 3.5-inch, half-height disk drive
<b>PBXRW-NA</b>	4.3 GB 16-bit wide 7200 RPM 3.5-inch half-height disk drive

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**Step 4b—Storage Controller**

- .. Maximum two EISA-based KZESC-xx SCSI controllers supported per system. Maximum number of EISA-based controllers of all types is limited by the total number of available EISA slots and available IRQs.
- .. KZPSC-xx StorageWorks RAID Array 230 includes PCI backplane RAID controller and StorageWorks RAID Array 230 Subsystem family software and documentation kit for OpenVMS, DIGITAL UNIX and Windows NT.
  - KZPSC-AA one-port controller installed in Pedestal system requires a PB7HA-BA SCSI cable kit for connection to internal StorageWorks shelf, two kits required for split bus mode.
  - KZPSC-BA three-port controller installed in Pedestal system requires one PB7HA-BA SCSI cable kit for connection to internal StorageWorks shelf, split-bus mode requires two SCSI cable kits.
    - Note:** If all three ports on KZPSC-BA controller are used, third external port blocks an additional PCI bulkhead slot.
- .. KZESC-xx StorageWorks RAID Array 210 includes EISA backplane RAID controller and StorageWorks RAID Array 210 Subsystem family software and documentation kit for OpenVMS, DIGITAL UNIX and Windows NT.
  - KZESC-AA one-port controller installed in Pedestal system requires one PB7HA-AA SCSI cable kit for connection to internal StorageWorks shelf, split-bus mode requires two SCSI cable kits.
  - KZESC-BA three-port controller installed in Pedestal system requires one PB7HA-AA SCSI cable kit for connection to internal StorageWorks shelf, split-bus mode requires two SCSI cable kits.
    - Note:** If all three ports on KZESC-BA controller are used for external storage, third external port blocks an additional PCI bulkhead slot.
- .. KZPSA-BB PCI-based one-port Fast Wide Differential SCSI controller supports externally connected wide disks in BA356/BA36R with DWZZB signal converter, or narrow disks in BA35R with DWZZA signal converter. Internal hard disk drives are not supported on FWD controller.
- .. SCSI cables are not included and must be ordered separately.
- .. External DSSI cables are not included and must be ordered separately.

**Step 4b—Storage Controller (continued)****SCSI Controllers**

<b>KZPAA-AA</b>	PCI-based one-port high-performance Fast Narrow Single Ended (FNSE) SCSI-2 controller
<b>BN21H-xx</b>	Connects from KZPAA-AA to narrow StorageWorks enclosures and narrow StorageWorks rackmount shelves. Pedestal system requires PB7HA-AA SCSI cable kit for connection to internal StorageWorks shelf
<b>KZPSA-BB</b>	PCI-based one-port high-performance Fast Wide Differential (FWD) SCSI controller. Supports external disks only.
<b>BN21K-02</b>	Connects from KZPSA to DWZZA-VA in narrow StorageWorks enclosures and narrow StorageWorks rackmount shelves, or DWZZB-VW in wide StorageWorks enclosures and wide StorageWorks rackmount shelves
<b>KZPDA-AA</b>	PCI-based one-port Fast Wide Single Ended (FWSE) SCSI controller
<b>BN21K-02</b>	Connects from KZPDA to wide StorageWorks enclosures and wide StorageWorks rackmount shelves.
<b>KZPSC-AA*</b>	One-port PCI backplane RAID Fast Wide Single Ended (FWSE) controller; includes StorageWorks RAID Array 230 Subsystem family software and documentation kit. Pedestal system requires PB7HA-BA SCSI cable kit for connection to internal StorageWorks shelf.
<b>BN31S-1E</b>	Connects from KZPSC-AA to wide StorageWorks enclosures and wide StorageWorks rackmount shelves
<b>BN31L-1E</b>	Connects from KZPSC-AA to narrow StorageWorks enclosures and narrow StorageWorks rackmount shelves
<b>KZPSC-BA*</b>	Three-port PCI backplane RAID (FWSE) controller; includes StorageWorks RAID Array 230 Subsystem family software and documentation kit. Pedestal system requires PB7HA-BA SCSI cable kit for connection to internal StorageWorks shelf.
<b>BN31K-0E</b>	SCSI cable/bulkhead assembly kit for KZPSC-BA; required for connection to third port; uses one PCI bulkhead slot.
<b>BN31S-1E</b>	Connects from KZPSC-BA to wide StorageWorks enclosures and wide StorageWorks rackmount shelves
<b>BN31L-1E</b>	Connects from KZPSC-BA to narrow StorageWorks enclosures and narrow StorageWorks rackmount shelves
<b>KZESC-AA*</b>	One-port EISA backplane RAID (FNSE) controller; includes StorageWorks RAID Array 210 Subsystem family software and documentation kit. Pedestal system requires PB7HA-AA SCSI cable kit for connection to internal StorageWorks shelf
<b>BN21H-02</b>	Connects from KZPAA-AA to narrow StorageWorks enclosures and narrow StorageWorks rackmount shelves
<b>BN21N-02</b>	Connects from KZESC-BA to wide StorageWorks enclosures and wide StorageWorks rackmount shelves
<b>KZESC-BA*</b>	Three-port EISA backplane RAID controller; includes StorageWorks RAID Array 210 Subsystem family software and documentation kit. Pedestal system requires PB7HA-AA SCSI cable kit for connection to internal StorageWorks shelf.
<b>CK-SWXCR-AA</b>	SCSI cable/bulkhead assembly kit for KZESC-BA, required for connecting second and third ports to bulkhead slot
<b>BN21H-02</b>	Connects from KZESC-BA to narrow StorageWorks enclosures and wide StorageWorks rackmount shelves
<b>BN21N-02</b>	Connects from KZESC-BA to wide StorageWorks enclosures and wide StorageWorks rackmount shelves
<b>KZPSM-AA</b>	PCI-based SCSI Ethernet combination controller. (FWSE) SCSI controller, 10 Mbit Ethernet.
<b>BC25V-1A</b>	SCSI cable/bulkhead assembly kit for KZPSM-AA; connects from KZPSM-AA to bulkhead for external storage; requires BN21K-xx SCSI cable
<b>BN21K-xx</b>	Connects from KZPSM-AA bulkhead assembly kit wide StorageWorks enclosures and wide StorageWorks rackmount shelves

\* See *Storage Devices* for additional information on StorageWorks RAID Array 2x0 Subsystems

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**Step 4b—Storage Controllers (continued)****DSSI Controllers**

<b>KFPSA-AA</b>	PCI-based single-DSSI controller (OpenVMS systems only). See Step 4f DSSI cables.
<b>KFESB-AA</b>	EISA-based single-DSSI controller (OpenVMS systems only). Uses one EISA slot if system is end node in OpenVMS cluster, or two slots if system is middle node in OpenVMS cluster. Maximum two (if end node in cluster) or maximum of one (if middle node in cluster). See Step 4f DSSI cables.

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**Step 4c—External Tape Expansion**

- .. Integral Fast Wide Single Ended SCSI-2 controller installed in Pedestal systems can be extended outside the system enclosure for narrow devices only.
  - 0.5 meters when internal narrow device is connected and StorageWorks assembly is configured in single-bus mode in Pedestal enclosure only.
  - 1.0 meters when internal narrow device is connected and StorageWorks assembly is configured in split-bus mode in Pedestal enclosure only.
- .. External tape drives are also supported on optional PCI-based SCSI controllers.
  - KZPAA-AA—maximum bus length including cable and tape device cannot exceed 3.0 meters.
  - KZPSA-BB—maximum bus length including cable and tape device cannot exceed 25.0 meters.
- .. External tape drives supported on one- and three-port (KZPSC-xx) SCSI controllers on Windows NT systems **only**.
- .. External tape drives are **not** supported on one- and three-port (KZESC-xx) Fast-SCSI-2 controllers.
- .. Each tabletop tape device **requires** high density 50-pin to low density 50-pin SCSI cable (BN23G-0E).

**External Tapes supported on Windows NT Servers**

<b>TLZ09</b>	4.0/8.0 GB 4 mm DAT tape drive
<b>TLZ7L</b> <sup>1,2</sup>	32.0 GB 4 mm DAT autoloader
<b>TZK11-DA</b>	2.0 GB 5.25-inch tabletop QIC tape drive
<b>TZ87</b> <sup>2</sup>	20 GB, DLT tape drive
<b>TZ875</b> <sup>2</sup>	100 GB, DLT tape autoloader
<b>TZ877</b> <sup>2</sup>	140 GB, DLT tape autoloader
<b>BN23G-0E</b>	3 Foot Molded SCSI Cable, required for each tabletop tape device

1 Includes four cartridge loader. Larger magazines are supported.

2 Base operating systems support sequential back-up mode only; additional software is required for random access backup. See *Storage Devices* for details.

**External Tapes supported on DIGITAL UNIX and OpenVMS servers**

<b>TLZ09</b> <sup>3</sup>	4.0/8.0 GB 4 mm DAT tape drive
<b>TLZ7L</b> <sup>1,2,3</sup>	32.0 GB 4 mm DAT autoloader
<b>TZK11-DA</b> <sup>3</sup>	2.0 GB 5.25-inch tabletop QIC tape drive
<b>TKZ60-FA/FC</b>	400 MB IBM 3480/3490 compatible tabletop tape drive
<b>TKZ60-EA</b> <sup>3</sup>	400 MB IBM 3480/3490 compatible tabletop tape drive
<b>TKZ61</b>	400 MB IBM compatible tape autoloader
<b>TKZ61-AC</b> <sup>3</sup>	400 MB IBM compatible tape autoloader
<b>TKZ62</b>	2.4 GB IBM compatible tape autoloader
<b>TKZ62-AC</b> <sup>3</sup>	2.4 GB IBM compatible tape autoloader
<b>TKZ15-TA</b>	10 GB, 8 mm, tabletop tape drive
<b>TKZ15-VA</b> <sup>3,4</sup>	10 GB, 8 mm, tabletop tape drive
<b>TSZ07-CA</b>	40/140 MB, reel/reel, tabletop tape drive
<b>TSZ07-AA</b> <sup>3</sup>	40/140 MB, reel/reel, tabletop tape drive

1 Includes four cartridge loader. Larger magazines are supported.

2 Base operating systems support sequential back-up mode only; additional software is required for random access backup. See *Storage Devices* for details.

3. Variants for use in Rackmount systems

4. Windows NT require layered driver software QB-4STAA-SA

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**Step 4c—External Tape Expansion (continued)****External Tapes supported on DIGITAL UNIX and OpenVMS servers**

<b>TZ875<sup>2</sup></b>	100 GB, DLT tape autoloader
<b>TZ877<sup>2</sup></b>	140 GB, DLT tape autoloader
<b>TZ87<sup>2</sup></b>	20 GB, DLT tape drive
<b>TZ87-VA<sup>3</sup></b>	20 GB, DLT tape drive
<b>TZ88<sup>2</sup></b>	20/40 GB, DLT tape drive
<b>TZ887-NT</b>	140/280 GB SCSI tape subsystem
<b>TKZ9E-TA<sup>5</sup></b>	2/5/7/10/14 GB 8 mm helical scan tape drive, tabletop
<b>TKZ9E-VA<sup>3</sup></b>	2/5/7/10/14 GB 8 mm helical scan tape drive in StorageWorks SBB carrier
<b>BN23G-0E</b>	3 Foot Molded SCSI Cable, required for each tabletop tape device.

2. Base operating systems support sequential back-up mode only; additional software is required for random access backup. See *Storage Devices* for details.
  3. Variants for use in Rackmount systems
  5. 8 mm drive requires OpenVMS MK-driver patch when connected to KZPSA controller in OpenVMS system.
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**Step 4d—External Disk Expansion for Pedestal Systems**

- .. BA353 expansion units are supported on wide and narrow SCSI controllers. Devices operate in narrow mode when BA353 is connected to a Fast Wide SCSI controller.
- .. BA362, BA364, BA356 and BA346 expansion units are supported on Fast Wide SCSI controllers.

**StorageWorks Modular Storage Options**

<b>BA353-AA</b>	StorageWorks 8-bit <b>Narrow</b> Desktop expansion unit includes enclosure and 120 V power cord. Supports up to three 3.5" narrow hard disk drives. Not supported with RAID controllers.
<b>BA356-KC</b>	StorageWorks 16-bit <b>Wide</b> Pedestal expansion unit includes BA356 basic shelf, BA35X-HA universal ac power supply, pedestal mounting kit, and 120 V power cord. Supports up to seven 3.5" wide or narrow drives; narrow drives operate in narrow mode.
<b>BA346-KB</b>	StorageWorks 16-bit <b>Wide</b> Pedestal expansion unit includes BA356 basic shelf, BA35X-HA universal ac power supply, pedestal mounting kit, and 120 V power cord. Supports up to nine devices, two 5.25" narrow and seven 3.5" wide or narrow drives; narrow drives operate in narrow mode.
<b>BA362-AA/AB</b>	StorageWorks desktop expansion unit, supports up to two 3.5" narrow/wide SCSI devices
<b>BA364-AA/AB</b>	StorageWorks desktop expansion unit, supports up to four 3.5" narrow/wide SCSI devices and one fixed CD-ROM
<b>DWZZA-VA</b>	Bi-directional SCSI signal converter and bus extender kit. 16 bit Fast Wide Differential SCSI-2 on one end and 8 bit Fast Narrow Single-Ended SCSI-2 on other end.
<b>DWZZB-VW</b>	Bi-directional SCSI signal converter and bus extender kit. 16 bit Fast Wide Differential SCSI-2 on one end and 8 or 16 bit Fast Wide or Fast Narrow Single-Ended SCSI-2 on other end.

See *Storage Device* for additional ordering information for StorageWorks modular storage expansion and supported devices.

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**Step 4e—External Disk Expansion for Cabinet Systems**

- .. External BA35R Rackmount StorageWorks shelves are supported on all Fast SCSI-2 controllers.
- .. External BA36R Rackmount StorageWorks shelves are supported on Fast Wide SCSI controller.
- .. AlphaServer 1000 Rackmount systems provide four SCSI expansion ports on rear panel of system.
- .. Order BN21H-02 cable to connect a single BA35R StorageWorks shelf to controllers.
- .. Order BN31\*-xx cable to connect a single BA36R StorageWorks shelf to controllers.

**StorageWorks BA35R/BA36R 8-bit and 16-bit Rackmount Shelves**

<b>BA36R-AF</b>	Front mount BA356 Rackmount StorageWorks Shelf, BA35R-MH 16-bit I/O module, BA35X-HF power supply
<b>BA36R-AR</b>	Rear mount BA356 Rackmount StorageWorks Shelf, BA35R-MH 16-bit I/O module, BA35X-HF power supply

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**Step 4e—External Disk Expansion for Cabinet Systems (continued)****StorageWorks BA35R/BA36R 8-bit and 16-bit Rackmount Shelves**

<b>BA35R-SF</b>	Front Mount BA356 Rackmount StorageWorks Shelf, BA35X-MG 8-bit I/O module, BA35X-HF power supply
<b>BA35R-SR</b>	Rear Mount BA356 Rackmount StorageWorks Shelf, BA35X-MG 8-bit I/O module, BA35X-HF power supply
<b>DWZZA-VA</b>	Bi-directional SCSI signal converter and bus extender kit. 16 bit Fast Wide Differential SCSI-2 on one end and 8 bit Fast Narrow Single-Ended SCSI-2 on other end. <b>Requires</b> BN21K-** cable.
<b>DWZZB-VW</b>	Bi-directional SCSI signal converter and bus extender kit. 16 bit Fast Wide Differential SCSI-2 on one end and 8 or 16 bit Fast Wide Single-Ended SCSI-2 on other end. <b>Requires</b> BN21K-** cable.

See *Storage Devices* for additional ordering information for StorageWorks modular storage expansion and supported devices.

**Hard Disk Drives for Rackmount StorageWorks Shelves (External only)**

- .. Wide drives require wide controller to operate in 16-bit wide mode.
- .. Wide drives are supported in BA36R Rackmount StorageWorks shelves
- .. Narrow drives are supported in BA35R Rackmount StorageWorks shelves

<b>RZ26N-VA</b>	1.05 GB 8-bit narrow 5400 RPM 3.5 x 1" SCSI hard disk drive
<b>RZ28M-VA</b>	2.1 GB 8-bit narrow 5400 RPM 3.5 x 1" SCSI hard disk drive
<b>RZ28D-VA</b>	2.1 GB 8-bit narrow 7200 RPM 3.5 x 1" SCSI hard disk drive
<b>RZ29B-VA</b>	4.3 GB 8-bit narrow 7200 RPM 3.5 x 1.6" SCSI hard disk drive
<b>DS-RZ26N-VZ</b>	1.05 GB 16-bit wide 5400 RPM 3.5 x 1" SCSI hard disk drive
<b>DS-RZ28M-VZ</b>	2.1 GB 16-bit wide 5400 RPM 3.5 x 1" SCSI hard disk drive
<b>RZ28D-VW</b>	2.1 GB 16-bit wide 7200 RPM 3.5 x 1" SCSI hard disk drive
<b>RZ29B-VW</b>	4.3 GB 16-bit wide 7200 RPM 3.5 x 1.6" SCSI hard disk drive

\* Wide drives operate in 8-bit narrow mode when connected to integral Fast Narrow Single Ended SCSI-2 controller

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**Step 4f—DSSI Cables**

- .. KFESB-AA EISA based DSSI controller cables:
  - KFESB to any external "Pin-Socket" DSSI connection (VAX 4000s, R400X) requires BC22Q-xx DSSI cable.
  - KFESB to any external "Micro-Ribbon" DSSI straight connection (all other DSSI systems and storage devices requiring straight connection) requires BC21Q-xx DSSI cable.
  - KFESB to any external "Micro-Ribbon" DSSI right-angle connection (all other DSSI systems and storage devices requiring right-angle connection) requires BC29S-xx DSSI cable.
- .. KFPSA PCI based DSSI controller cables:
  - KFPSA to any external "Pin-Socket" DSSI connection requires BC22Q-xx
  - KFPSA to any external "Micro-Ribbon" DSSI straight connection (all other DSSI systems and storage devices requiring straight connection) requires BC21Q-xx
  - KFPSA to any external "Micro-Ribbon" DSSI right-angle connection (all other DSSI systems and storage devices requiring right-angle connection) requires BC29S-xx DSSI cable
  - Order BC29S-09 DSSI cable for HSD10 in BA36R-Ax shelves
  - Order BC29U-02 DSSI cable for HSD10 in adjacent BA36R-Ax shelves
  - Order BC29V-06 DSSI cable for HSD10 in non-adjacent BA36R-Ax shelves

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## Step 5—Graphics Adapters

**Note:** Selection of graphics option is **mandatory** for Windows NT Pedestal Packaged Systems

EISA Configuration Utility (ECU) is accessible via the console port for DIGITAL UNIX and OpenVMS systems. Optional graphics capability is available. Select graphics adapter, monitor, and country specific keyboard for DIGITAL UNIX and OpenVMS systems if required.

<b>PB2GA-JC</b>	PCI based 1MB DRAM graphics adapter 1024 x 768
<b>PB2GA-JD</b>	PCI based 2MB DRAM graphics adapter 1024 x 768
<b>PBXGB-AA</b>	PCI based 8-plane 1280 x 1024 graphics adapter
<b>PBXGB-CA</b>	PCI based 24-plane 1280 x 1024 graphics adapter

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## Step 6—Networks and Communications

- .. Packaged systems include PCI-based Fast 100 Ethernet (Twisted Pair) controller (DE500-AA), uses one PCI slot.
- .. All options use one slot except DEFEA-DA which uses two slots
- .. Select networking cable for Ethernet controller
  - BN26K-xx for 10BaseT (twisted pair)
- .. Maximum number of **each** EISA-based network controllers supported per system:
  - Two DE425-AA, Two DEFEA-xA, Two DW300-AA, Two DNSES

<b>DE500-AA</b>	PCI-based Fast Ethernet network interface card (see PCI Option Slot Table)
<b>DE425-AA</b>	EISA-based Ethernet; OpenVMS and DIGITAL UNIX only
<b>DE450-CA</b>	PCI based DIGITAL Etherworks 32-bit network interface card (twisted pair, Thick wire, ThinWire)
<b>DEFPA-AB*</b>	PCI-based DEC FDDIcontroller, Single Attachment; maximum seven on OpenVMS and Windows NT, four on DIGITAL UNIX.
<b>DEFPA-DB</b>	PCI-based DEC FDDIcontroller, Dual Attachment, maximum seven on OpenVMS and Windows NT, four on DIGITAL UNIX.
<b>DEFPA-UB</b>	PCI-based DEC FDDI (UTP) controller; maximum seven on OpenVMS and Windows NT, four on DIGITAL UNIX.
<b>DGLPB-AB</b>	PCI-based ATMworks 350 adapter
<b>PBXNP-AA</b>	PCI-based Token Ring adapter, no boot support. DIGITAL UNIX and OpenVMS systems require driver floppy.

\* Supported as data device only

<b>DEFEA-AA</b>	EISA-based DEC FDDIcontroller, Single Attachment
<b>DEFEA-DA</b>	EISA-based DEC FDDIcontroller, Dual Attachment (requires two slots)
<b>DEFEA-UA</b>	EISA-based DEC FDDI (UTP) controller
<b>DW300-AA</b>	EISA-based Token-Ring adapter includes NetWare V2.15 driver, LAN Manager Driver, and documentation (Not supported by DECnet/OSI for OpenVMS)
<b>DNSES-AA</b>	EISA-based synchronous communications controller; DIGITAL UNIX and OpenVMS systems only
<b>CXI01-AA</b>	ISA Async MUX Adapter, 16 lines—expandable to 64 lines; Windows NT and DIGITAL UNIX only
<b>CXI01-AD</b>	ISA Async MUX Adapter, 16 lines—expandable to 224 lines; Windows NT and DIGITAL UNIX only
<b>PBXDI-AA</b>	ISA-based Two Port Synchronous Communications controller with interface support for EIA-232/V.24/V.28; Windows NT only
<b>PBXDI-AB</b>	ISA-based Two Port Synchronous Communications controller with interface support for V.35; Windows NT only
<b>PBXDI-AC</b>	ISA-based Two Port Synchronous Communications controller with interface support for X.21 and EIA-530; Windows NT only
<b>DIIAA-AA</b>	ISA-based ISDN terminal adapter (U.S.); Windows NT only
<b>DIIAA-AB</b>	ISA-based ISDN terminal adapter (non-U.S.); Windows NT <b>only</b>

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## Step 7—Additional Power Supply—Pedestal Systems Only

**Note:** AlphaServer 1000A Rackmount and Cabinet systems do **not** support dual power supply configurations

- .. Additional power supply may be added to AlphaServer 1000A Pedestal system for n+1 redundancy.
- .. Country specific power cord must be ordered separately, see Step 10.

**H7290-AA**            450-Watt Redundant Power Supply Option

See UPS information following System Specifications.

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## Step 8—Printers and Remote Console

The KCRCM is an EISA form-factor card that enables a remote user to gain access to the system's console terminal port, and reset, halt, and power cycle the system. It functions independently of the operating system.

**KCRCM-AA**            Remote System access for 110V North American  
**KCRCM-BA**            Remote System access for 220V Europe  
**KCRCM-CA**            Remote System access for 220V U.K.  
**KCRCM-DA**            Remote System access for 240V Australia/New Zealand

Systems include two EIA-232 asynchronous serial ports with 9-pin D-subminiature connectors.

Select serial printers as required. A 9-pin to MMJ adapter (H8571-J) is required for each connection. A cable must be ordered unless otherwise provided.

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## Step 9—Software

- .. North American variants of Windows NT Packaged systems include Windows NT license, media (CD-ROM) kits (see Step 1). **Note:** Selection of language specific Windows NT media kit is **mandatory** for non North American variants.
- .. Order documentation kit if required.

### Windows NT Server plus 10-client access license, media (CD-ROM) kits

**QB-23CAA-SB**        Windows NT Server license, media kit North American English  
**QB-23C8A-SB**        Windows NT Server license, media kit International English  
**QB-23CPA-SB**        Windows NT Server license, media kit French  
**QB-23CGA-SB**        Windows NT Server license, media kit German  
**QB-23CSA-SB**        Windows NT Server license, media kit Spanish  
**QB-23CUA-SB**        Windows NT Server license, media kit Italian  
**QB-23CJA-SB**        Windows NT Server license, media kit Japanese  
**QB-23C5A-SB**        Windows NT Server license, media kit Thai  
**QB-23CMA-SB**        Windows NT Server license, media kit Swedish  
**QB-23CTA-SB**        Windows NT Server license, media kit Hebrew  
**QB-23CQA-SB**        Windows NT Server license, media kit Arabic  
**QB-23CHA-SB**        Windows NT Server license, media kit Dutch  
**QB-23CVA-SB**        Windows NT Server license, media kit Brazilian/Portuguese  
**QB-23C4A-SB**        Windows NT Server license, media kit Korean  
**QB-23C3A-SB**        Windows NT Server license, media kit Taiwanese  
**QB-23C2A-SB**        Windows NT Server license, media kit PRC Chinese

### Windows NT Server Optional software and documentation

**QA-23CAA-GZ**        Windows NT Server documentation kit  
**QA-23C8A-GZ**        Windows NT International English Server documentation kit  
**QB-4G45A-AA**        Purveyor Web Server Software V1.1 for Process Software Corp.

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**Step 9—Software (continued)****DIGITAL UNIX****Software Processor Code = E**

- .. DIGITAL UNIX Packaged systems include Traditional Unlimited User license.
- .. DIGITAL UNIX Packaged systems **require** operating system media and documentation for **first** system on site.

**DIGITAL UNIX Media and Documentation—required for first system on site**

- QA-MT4AA-H8 DIGITAL UNIX media and on-line documentation on CD-ROM
- QA-MT4AA-GZ DIGITAL UNIX full hardcopy documentation

**DIGITAL UNIX Layered Products CD-ROM**

- QA-054AA-H8 Layered products media and documentation for DIGITAL UNIX on CD-ROM

**DECnet for DIGITAL UNIX**

- QL-MTJAE-AA DECnet/OSI end-system license for DIGITAL UNIX
- QL-MTKAE-AA DECnet/OSI extended function license for DIGITAL UNIX

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**OpenVMS****Software Processor Code = E**

OpenVMS Concurrent Use Licenses are **not** specific to a single system and can be moved between systems at user discretion. OpenVMS Concurrent Use Licenses can also be shared in a mixed OpenVMS VAX and OpenVMS Alpha Cluster.

**OpenVMS Concurrent Use Licenses**

- QL-MT3AA-3B OpenVMS Concurrent Use 1-user license
- QL-MT3AA-3C OpenVMS Concurrent Use 2-user license
- QL-MT3AA-3D OpenVMS Concurrent Use 4-user license
- QL-MT3AA-3E OpenVMS Concurrent Use 8-user license
- QL-MT3AA-3F OpenVMS Concurrent Use 16-user license
- QL-MT3AA-3G OpenVMS Concurrent Use 32-user license
- QL-MT3AA-3H OpenVMS Concurrent Use 64-user license
- QL-MT3AA-3J OpenVMS Concurrent Use 128-user license
- QL-MT3AA-3K OpenVMS Concurrent Use 256-user license
- QL-MT2AE-AA OpenVMS Traditional unlimited user license

**OpenVMS Media and Documentation**

- QA-MT1AA-H8 OpenVMS media and on-line documentation CD-ROM
- QA-001AA-GZ OpenVMS hardcopy documentation

**OpenVMS Layered Products CD-ROM**

- QA-03XAA-H8\* Layered products media and documentation for OpenVMS on CD-ROM

\* Includes DIGITAL Enterprise Integration Server for OpenVMS media and documentation

**DIGITAL Enterprise Integration Package**

- QA-5LVAA-H8 DIGITAL Enterprise Integration Server for OpenVMS media and documentation

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## Step 9—Software (*continued*)

### DECnet for OpenVMS

- QL-MTGAE-AA**    DECnet extended function license for OpenVMS  
**QL-MTHAE-AA**    DECnet end-system to extended function upgrade license for OpenVMS

### DSSI Information

- EK-410AB-MG**    DSSI VMScluster Installation Guide  
**EK-D4AXP-TS**    DSSI VMScluster Troubleshooting Guide
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## Step 10—Power Cords, Keyboards, and Documentation

### Pedestal and Monitor Power Cords

- .. North American variants include BN26J-1K 120 V (North American, Japan) power cord. If an other power cord is selected, both power cords ship with system.

<b>BN26J-1K</b>	North American, Japan, 120 V, 75-inches long
<b>BN19H-2E</b>	Australia, New Zealand, 2.5 meters long
<b>BN19C-2E</b>	Central Europe, 2.5 meters long
<b>BN19A-2E</b>	U.K., Ireland, 2.5 meters long
<b>BN19E-2E</b>	Switzerland, 2.5 meters long
<b>BN19K-2E</b>	Denmark, 2.5 meters long
<b>BN19Z-2E</b>	Italy, 2.5 meters long
<b>BN19S-2E</b>	Egypt, India, South Africa, 2.5 meters long
<b>BN18L-2E</b>	Israel, 2.5 meters long

### Rackmount Power Cords

- .. 120V and 240V 15 foot power cords are included with all systems, variant designates power cord voltage (see Step 1).
- .. **Note:** AlphaServer 1000A Pedestal system power cords are less than 15-feet long and are **not** supported in cabinet enclosures.

**Step 10—Power Cords, Keyboards, and Documentation** (*continued*)**Keyboards**

- .. Some variants include a keyboard (see Step 1). For these variants, if an additional keyboard is ordered, both keyboards ship with system.

101 key PC style keyboard		Language	108 key VT style keyboard	
Windows NT	DIGITAL UNIX		OpenVMS	DIGITAL UNIX
LK471-A2	LK471-A2	U.S./English	LK461-A2	LK461-A2
LK471-AB	LK471-AB	Belgian	LK461-AB	LK461-AB
LK471-AC	LK471-AC *	Canadian/French	LK461-AC	LK461-AC
LK471-AD	LK471-AD	Danish	LK461-AD	LK461-AD
LK471-AE	LK471-AE	United Kingdom	LK461-A2	LK461-A2
LK471-AF	LK471-AF	Finnish	LK461-AF	LK461-AF
LK471-AG	LK471-AG	German	LK461-AG	LK461-AG
LK471-AH	LK471-AH	Dutch	LK461-AH	LK461-AH
LK471-AI	LK471-AI	Italian	LK461-AI	LK461-AI
		Swiss/French	LK461-AK	LK461-AK
		Swiss/German	LK461-AL	LK461-AL
LK471-AK	LK471-AK	Swiss/Generic		
LK471-AM	LK471-AM	Swedish	LK461-AM	LK461-AM
LK471-AN	LK471-AN	Norwegian	LK461-AN	LK461-AN
LK471-AP	LK471-AP	French	LK461-AP	LK461-AP
		Canadian/English		LK641-AQ *
LK471-AS	LK471-AS	Spanish	LK461-AS	LK461-AS
LK471-AV	LK471-AV	Portuguese	LK461-AV	LK461-AV

\* Requires DIGITAL UNIX V4.0 or higher

**Mouse and Extension Cable Kit**

- PBXWS-AA** 3-button mouse (included with all systems, order as spare or replacement)  
**2T-450KM-AA** Extension cable kit for VGA, PC style keyboard, and mouse, for use with Rackmount systems.

**Pedestal Documentation: Customer and Service Kits**

- .. All variants include (QZ-00MAA-GZ) English customer kit documentation. Select other language customer kits if required. If an other customer kit is selected, both will ship.
- .. Select service kits for all systems if required.

Customer Kit	Service Kit	
<b>QZ-00MAA-GZ</b>	<b>QA-00MAB-GZ</b>	Customer and Service kit for AlphaServer 1000A—English
<b>QZ-00MPA-GZ</b>		Customer and Service kit for AlphaServer 1000A—French
<b>QZ-00MJA-GZ</b>		Customer and Service kit for AlphaServer 1000A—Japanese
<b>QZ-00MUA-GZ</b>		Customer and Service kit for AlphaServer 1000A—Italian
<b>QZ-00MGA-GZ</b>		Customer and Service kit for AlphaServer 1000A—German

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## Step 11—Cabinet Enclosure

Select cabinet enclosure for AlphaServer 1000A Rackmount systems, if required.

- .. H9A10 19-inch EIA Cabinet Enclosure
  - Outside: 66.9-inches high
  - Internal usable rackmountable space: 59.5-inches high, 19-inches wide, 30.8-inches deep
- .. H9A15 19-inch EIA Cabinet Enclosure
  - Outside: 78.7-inches high
  - Internal usable rackmountable space: 71.75-inches high, 19-inches wide, 29.75-inches or 37.12-inches deep
- .. H9A11 19-inch EIA Cabinet Enclosure
  - Outside: 43.3-inches high
  - Internal usable rackmountable space: 36.75-inches high, 19-inches wide, 29.75-inches or 37.15-inches deep

<b>H9A10-CE</b>	120V EIA Cabinet assembly, dual power controllers, RETMA rails
<b>H9A10-CJ</b>	240V EIA Cabinet assembly, dual power controllers, EIA standard rails
<b>H9A10-CG</b>	120V EIA Cabinet assembly, dual power controllers, swing front door, RETMA rails
<b>H9A10-CK</b>	240V EIA Cabinet assembly, dual power controllers, swing front door, EIA standard rails
<b>H9A10-AB</b>	EIA Cabinet assembly, no power controller, swing rear door
<b>H9A10-AD</b>	EIA Cabinet assembly, no power controller, swing front and rear doors
<b>H9A15-BA/BB</b>	120 V/240 V EIA Cabinet assembly, 29.75" deep, dual power controllers, swing rear door
<b>H9A15-BC/BD</b>	120 V/240 V EIA Cabinet assembly, 29.75" deep, dual power controllers, swing front and rear doors
<b>H9A15-CA/CB</b>	120 V/240 V EIA Cabinet assembly, 37.12" deep, dual power controllers, swing rear door
<b>H9A15-BE</b>	EIA Cabinet assembly, 29.75" deep, no power controller, swing rear door
<b>H9A11-BA/BB</b>	120V/240 V EIA Cabinet assembly 30.8" deep, one power controller, lift-off rear door
<b>H9A11-BE</b>	EIA Cabinet assembly, 30.8" deep, no power controller, lift-off rear door

### Power Distribution Units for Cabinets with no power controller

<b>H7600-AA</b>	Power Distribution Unit 100V-120V, 50-60 Hz, 24A 5 duplex 5-15R outlets, L5-30 power plug, 2 pole 15A circuit breaker, for use in 19 inch cabinets with RETMA rails. Requires two (2) AC Outlets, 120 V 60 Hz, NEMA L5-30R
<b>H7600-AB</b>	Power Distribution Unit 200V-240V, 50-60 Hz, 16A 5 duplex 6-15R outlets, L6-30 power plug, 2 pole 20A circuit breaker, for use in 19 inch cabinets with RETMA rails. Requires two (2) AC Outlets, 240V 50/60 Hz, NEMA L6-20R
<b>H7600-DB</b>	Power Distribution Unit, 200V-240V, 50-60 Hz, 16A 12 IEC 320 C13 outlets, IEC 309 power plug, 2 pole 16A circuit breaker, for use in 19 inch cabinets with EIA/ANSI (RETMA) rails

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## Step 12—Hardware and Software Supplemental Support Services

### Hardware—Americas and Asia Pacific only

- .. Systems include three-year hardware warranty, on-site with 5 x 9, 24-hour response time.
- .. Select optional Hardware Supplemental Support Services if required.

<b>FM-MK4HR-36</b>	5 x 9, 4-hour response time
<b>FM-MK512-36</b>	5 x 12, 4-hour response time
<b>FM-MK616-36</b>	6 x 16, 4-hour response time
<b>FM-MK724-36</b>	7 x 24, 4-hour response time
<b>FM-MKXHW-60</b>	Years 1-5, next day, Onsite
<b>FM-MK4HR-60</b>	Years 1-5, 5x9, 4-hour response time
<b>FM-MK512-60</b>	Years 1-5, 5x12, 4-hour response time
<b>FM-MK616-60</b>	Years 1-5, 6x16, 4-hour response time
<b>FM-MK724-60</b>	Years 1-5, 7x24, 4-hour response time

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**Step 12—Hardware and Software Supplemental Support Services (*continued*)**
**Software—Americas and Asia Pacific only**

- .. DIGITAL UNIX and OpenVMS Systems include 90-day Conformance to SPD and Telephone Advisory Support. Select optional Software Supplemental Support Services, if required.
- .. Software service upgrades for Windows NT include advisory and remedial software support for the time period indicated.
- .. Software service upgrades for DIGITAL UNIX include advisory and remedial software support with new version license rights for operating system for time period indicated.
- .. Software service upgrades for OpenVMS include advisory and remedial software support with new version license rights for operating system and Enterprise Integration Package (EIP) for time period indicated.

<b>FM-WNT03-12</b>	12-month Software Supplemental Support for <b>Windows NT</b> AlphaServer 1000A systems
<b>FM-WNT03-36</b>	36-month Software Supplemental Support for <b>Windows NT</b> AlphaServer 1000A systems
<b>FM-WNT03-60</b>	60-month Software Supplemental Support for <b>Windows NT</b> AlphaServer 1000A systems
<b>FM-MKOSF-12</b>	12-month Software Supplemental Support for <b>DIGITAL UNIX</b> AlphaServer 1000A systems
<b>FM-MKOSF-36</b>	36-month Software Supplemental Support for <b>DIGITAL UNIX</b> AlphaServer 1000A systems
<b>FM-MKOSF-60</b>	60-month Software Supplemental Support for <b>DIGITAL UNIX</b> AlphaServer 1000A systems
<b>FM-MKVMS-12</b>	12-month Software Supplemental Support for <b>OpenVMS</b> AlphaServer 1000A systems
<b>FM-MKVMS-36</b>	36-month Software Supplemental Support for <b>OpenVMS</b> AlphaServer 1000A systems
<b>FM-MKVMS-60</b>	60-month Software Supplemental Support for <b>OpenVMS</b> AlphaServer 1000A systems

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**Step 12a—Hardware and Software Supplemental Support Services (Europe only)**

Europe does **not** have specific part numbers for Hardware and Software Supplemental Support Services. Prices can be quoted using the Excelerator tool; contact MCS Sales in your country for information on Hardware and Software Supplemental Support Services.

## AlphaServer 1000A Pedestal System Specifications

<b>Shipping Dimension</b>			
Height	60 cm (23.8 in.)		
Width	43 cm (16.9 in.)		
Depth	65 cm (25.6 in.)		
Weight	43 kg (95 lb) typical 71 kg (156 lb) maximum		
<b>Installed Dimensions</b>			
Height	46 cm (18.1 in.)		
Width	35.8 cm (14.1 in.)		
Depth	58.6 cm (23.1 in.)		
Weight	39 kg (86 lb) typical 51 kg (113 lb) maximum		
<b>Clearances</b>	<b>Operating</b>	<b>Service</b>	
Front	75 cm (29.5 in.)	75 cm (29.5 in.)	
Rear	15 cm (6 in.)	75 cm (29.5 in.)	
Sides	None	75 cm (29.5 in.)	
<b>Environmental</b>			
Temperature	Operating*	10–40° C (50–104° F)	
	Nonoperating	Not tested	
	Storage (60 days)	-40–66° C (-40–151° F)	
	Rate of change	11° C/hr (20° F/hr)	
Relative humidity	Operating	20–80%	
	Nonoperating	20–80%	
	Storage (60 days)	10–95%	
	Rate of change	20%/hr	
Maximum wet bulb temperature	Operating	28° C (82° F)	
	Storage (60 days)	39° C (115° F)	
Minimum dew point temperature	Operating	12° C (36° F)	
	Storage (60 days)	Not tested	
Maximum heat dissipation	Current		
	Single supply	2390 Btu/hr	
	Dual supply	4097 Btu/hr	
Air flow and quality	Intake location	Front	
	Exhaust location	Rear	
	Particle size	N/A	
	Concentration	N/A	
Altitude	Operating†	2000 m (6562 ft)	
	Nonoperating	3600 m (12,000 ft)	
Mechanical shock	Operating	7.5 G 10 ms	
	Nonoperating	20 G peak 30 ms	
Vibration	Operating	10-500 Hz .1 G peak	
Acoustics		Average Declared	
	Operating	6.2 L <sup>wA</sup> , B 6.5 L <sup>wAd</sup> , B	
	Idle	6.0 L <sup>wA</sup> , B 6.3 L <sup>wAd</sup> , B	
<b>Electrical—Power Supplies are universal 120/240 Vac</b>			
Nominal ac voltage	100-120 Vac	220-240 Vac	
Operating Voltage range	90-128 Vac	180-256 Vac	
Power source phase	Single	Single	
Nominal frequency	60 Hz	50 Hz	
Frequency range	59-61 Hz	49-51 Hz	
Maximum inrush current	50 Amps	50 Amps	
RMS current at nominal voltage (steady state)			
	Single power supply	8.0 Amps	4.0 Amps
	Dual power supply	4.6 Amps each supply	2.2 Amps each supply
Power cord	Type	IEC 320 C13	
	Length	190 cm (75 in.)	
	U.S. plug	NEMA 5-15	

\* Maximum operating temperature at Sea Level. Reduce by 1 C (1.8 F) for each 600 m (2000 ft) above Sea Level.

† Higher altitudes are possible if maximum operating temperature is reduced (see Temperature, above); other restrictions may apply, such as maximum permissible altitude for hard drives.

AlphaServer 1000A Pedestal System Specifications (*continued*)**Regulatory**

Agency approvals	UL Listed to UL1950 (2nd edition) CSA Certified to CAN/CSA-C22.2 No. 950-M89 TUV EN 60950 VDE 0805 GS marked ZH1/618 FCC 15J Part 15 Class B Verified CE Class B Verified VCCI Class II ITE
Reviewed to	AS 3260 Australian Standard SS 436 14 50 Swedish Standard NZS 6661:1989 New Zealand Standard EN 60 950: 1992 European Norm IEC 950 (2 <sup>nd</sup> edition)

## AlphaServer 1000A Rackmount System Specifications

**Shipping Dimension**

Height	26.7 cm (10.5 in.)
Width	48.2 cm (19.0 in)
Depth	63.5 cm (25.0 in) system chassis 73.7 cm (29.0 in) system chassis & rackmount hardware
Weight	29 kg (65 lb)

**Clearances**

Front	124.04 cm (50.0 in)
Rear	61.0 cm (24.0 in)
Sides	None

**Service****Environmental**

Temperature	
Operating	10–35° C (50–95° F)
Nonoperating	Not tested
Storage (60 days)	-40–66° C (-40–151° F)
Relative humidity	20–80%
Operating	20–80%
Nonoperating	10–95%
Storage (60 days)	20%/hr
Rate of change	

## Air flow and quality

Intake location	Front
Exhaust location	Rear

**Electrical—Power Supplies are universal 120/240 Vac**

Nominal ac voltage	100-120 Vac	220-240 Vac
Operating Voltage range	90-128 Vac	180-256 Vac
Power source phase	Single	Single
Nominal frequency	60 Hz	50 Hz
Frequency range	59-61 Hz	49-51 Hz
Maximum inrush current	50 Amps	50 Amps
RMS current at nominal voltage (steady state)		
Single power supply	8.0 Amps	4.0 Amps
Power cord	Type	IEC 320 C13
	Length	4.57 m (15 ft.)
	U.S. plug	NEMA 5-15

**Regulatory**

Agency approvals	UL Listed to UL1950 (2nd edition) CSA Certified to CAN/CSA-C22.2 No. 950-M89 TUV EN 60950 VDE 0805 GS marked ZH1/618 EMCO-TSE (74-SEC), Summary of Nordic deviations FCC 15J Part 15 Class A verified CE Class A verified VCCI Class II ITE
Reviewed to	AD 3260 Australian Standard AS/NZS 3260:1963, Australian/New Zealand Standard EN 60 950: January 1993 European Norm IEC 950 (2 <sup>nd</sup> edition)

**Uninterruptable Power Supplies****Prestige 1250EXT**

UPS offerings include EIA232 port for local or network monitoring. For complete protection, UPS products should be used with data line surge protectors and UPS monitoring software.

<b>4N-AEABF-AA</b>	Prestige 1250EXT, 1250 VA/900W, 1 phase, 60 Hz, 120V 6-foot cord with 5-15P plug, (4) 5-15R receptacle, 9 minutes battery at full UPS load.
<b>4N-AEABF-BF</b>	Prestige 1250EXT, 1250 VA/900W, 1 phase, 50 Hz, 200-240V in/out selectable. Uses system power cord for detachable IEC320 input connection at UPS. Includes (3) IEC320 10A output receptacles, (2) output jumpers with IEC320 connectors to system.
<b>4N-AEAEO-PA</b>	Hot-swap Power-Pass Module for 60 Hz UPS with (7) 5-15R Surge Protected outlets.
<b>4N-AEAEO-PB</b>	Hot-swap Power-Pass Module for 50 Hz UPS with (6) IEC320, 10A surge protected outlets.
<b>4N-AEWAR-G1</b>	Prestige 5 year on-site exchange warranty upgrade (U.S. only).

**Data Surge Protection**

<b>4N-GA249-AB*</b>	Surge protector, modem connection, wall plug-in
<b>4N-GA249-CA*</b>	Surge protector, 10BaseT connection, wall plug-in
<b>4N-GA510-BF</b>	Surge Protector, ThinWire connection, device port
<b>4N-GA245-xx</b>	Surge Protector, multi-port connection, din rail/rackmount

\* Additional plug-in data modules (4N-GA240-xx) available.

**Monitoring and Unattended Shutdown Software for above UPS systems only (Include cables, media and documentation)**

<b>4N-AEAES-AA</b>	Single system shutdown for Windows NT
<b>4N-AEAES-BA</b>	NW management and multi system shutdown for Windows NT*
<b>4N-AEAES-AK</b>	Single system shutdown for DIGITAL UNIX
<b>4N-AEAES-BK</b>	NW management and multi system shutdown for DIGITAL UNIX*
<b>4N-AEAES-EM</b>	Single system shutdown for OpenVMS

\* Require network adapters: 4N-AEAEO-DA/DC for 120V 60 Hz; or 4N-AEAEO-DB/DD for 220V 50 Hz  
-DA and -DB = Twisted Pair; -DC and -DD = ThinWire