## 6.1 PDP-11/20. PDP-11/15 COMPUTERS

The PDP-11 is available as either a tabletop or rack-mounted configuration. The rack-mounted configuration may be installed in a DEC cabinet or mounted in a customer cabinet. The PDP-11 mounts in an EIA standard 19 inch cabinet. The rack-mounted PDP-11 has tilt-slides as standard mounting hardware.

The following mounting units and cabinets are available for PDP-11 systems.

### 6.1.1 PDP-11 Tabletop Box and Power Supply For 11/20, 11/15 Systems (BA11-CC and H720)

This cover and box may be specified with a basic system and includes:

1. H720 Power Supply

2. 15' of power cord with ground wire

   For 115 V standard, parallel blade, U-ground, 15 ampere connectors (NEMA 5-15P)

   For 230 V 3 prong U-ground (NEMA 6-15P)

3. Cooling Fans

4. Filter

5. Programmers Console with 11/20 or Turn-Key Console with 11/15

Approximate Size: 11'' high, 20'' wide, 25 5/8'' deep. Figure 6 shows the layout of this unit.
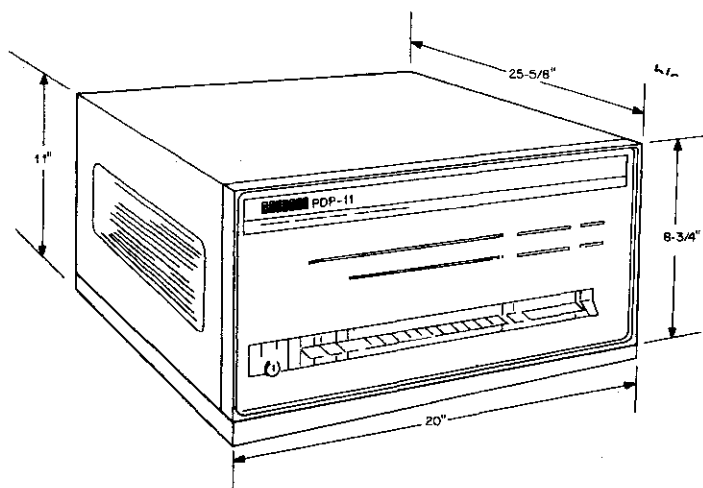


Figure 6.3 Table Top PDP-11 Dimensions

Approximate Weight: 100 lbs. (including CP, console and 4K core)

| Power: | 120 V + 10%, 47-53 Hz | 5 amps. single phase |
| | (BA11-CC and H720-E) | |
| | 230 V + 10%, 47-63 Hz | 2.5 amps. single phase |
| | (BA11-CC and H720-F) | |

### 6.1.2 PDP-11 Basic Mounting Box and Power Supply (BA11-CS and H720)

This basic mounting box may be specified with a basic 11/20 or a 11/15 system and includes:

1. Tilt and Lock Chasis Slides

2. H720 Power Supply

3. 15' of power cord with ground wire

    For 115V standard, parallel-blade, U-ground, 15-ampere connector, (NEMA 5-15P)

    For 230 V 3-prong, U-ground, NEMA No. 6-15P

4. Cooling Fans

5. Filter

6. Programmer's Console with 11/20 or Turn-Key Console with 11/15

Approximate Size: 10 1/2" high, 19" wide, 23" deep. Figures 10-3, 10-4 and 10-5 show the layout of this unit and give slide dimensions.

Approximate Weight: 90 lbs. (including CP, console and 4K core)

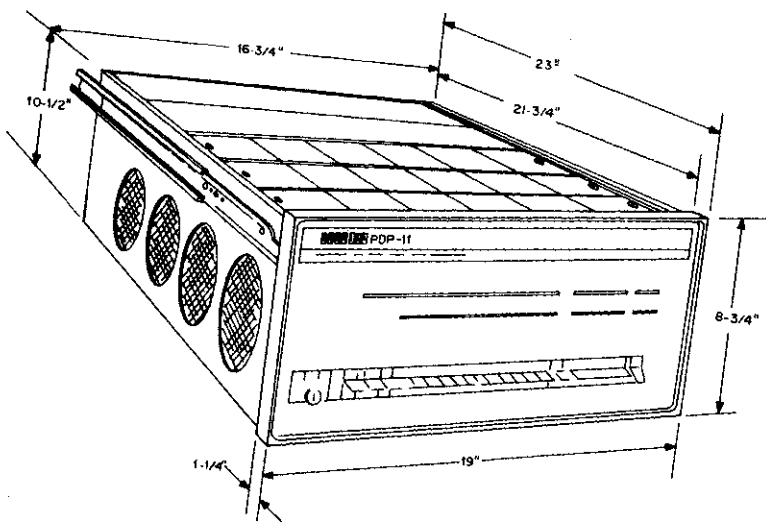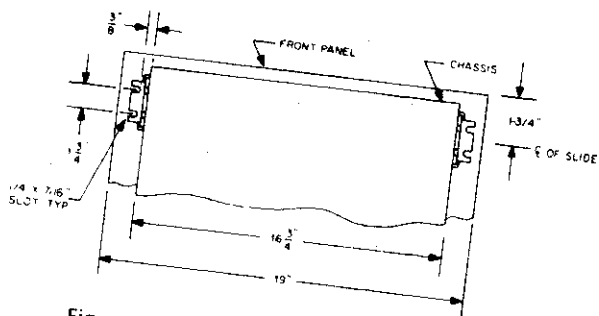| Power: | 120 V + 10%, 47-63 Hz | 5 amps. single phase |
| | (BA11-CS and H720-E) | |
| | 230 V + 10%, 47-63 Hz | 2.5 amps. single phase |
| | (BA11-CS and H720-F) | |

Figure 6.4 Rack-Mountable PDP-11 Dimensions



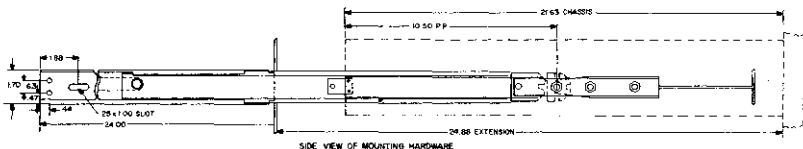Figure 6.5 Rear View of Mounting Hardware

Figure 6-6 Side View of Mounting Hardware

### 6.1.3 PDP-11/20 and PDP-11/15 Tabletop Extension Mounting Box (BA11-EC)

The tabletop Extension Box is supplied, when ordered, for mounting of up to 6 additional System Units which can not be contained in the Basic Mounting Box. This unit is supplied with:

1. 15' of power cord with ground wire

   For 115 V standard, parallel blade, U-ground, 15-ampere connector (NEMA 5-15P)

   For 230 V 3-prong, U-ground, NEMA 6-15P

2. Cooling Fans

3. Filter

4. Front Panel

5. UNIBUS Cable from Basic Mounting Box, 8'6" long

Approximate Size: 11" high, 20" wide, 24" deep

| Power: | 120 V + 10%, 47-63 Hz | 5 amps. single phase |
|---|---|---|
| | (when H720-E is added) | |
| | 230 V + 10%, 47-63 Hz | 2.5 amps. single phase |
| | (when H720-F is added) | |

### 6.1.4 PDP-11/20 Extension Mounting Box (BA11-ES)

The Extension Box is supplied, when ordered, for mounting of up to 6 additional System Units which can not be contained in the Basic Mounting Box. This unit contains:

1. Tilt and Lock chassis slides

2. 15' of power cord with ground wire

   For 115 V standard, parallel-blade, U-ground, 15-ampere connector (NEMA 5-15P)

   For 230 V 3-prong, U-ground (NEMA 6-15P)

3. Cooling Fans

4. Filter

5. Front Panel

6. Bus Cable from Basic Box, 8'6" long

130

Approximate Size: 10 1/2" high, 19" wide, 23" deep

Power:                      120 V + 10%, 47-63 Hz   5 amps. single phase
                             (when H720-E is added)
                      230 V + 10%, 47-63 Hz  2.5 amps. single phase
                             (when H720-F is added)

### 6.1.5 PDP-11 Freestanding Base Cabinet (H960-CA)

This optional cabinet can be used to mount the BA11-CS Basic Mounting Box and a BA11-ES Extension Mounting Box supplied with Tilt and Lock chassis slides in addition to other PDP-11 equipment.

Panel capacity is six 10 1/2" high mounting spaces, each of which is covered with black plastic panels if equipment is not mounted - (5 panels, maximum, supplied).

Items supplied with the cabinet include:

1. H950-A Frame

2. H952-E Coasters

3. H-952-F Levelers

4. H-952-C Fan Assembly (in top of cabinet)

5. H-950-S Filter

6. PDP-11 Logo

7. H-950-B Rear Door

8. 10 1/2" Plastic Bezels, maximum of 5 supplied

9. Two H952-A End Panels

### 6.1.6 Cable Requirements

When an Extension Mounting Box is used, an external cable, the BC11A, is the only signal connection between mounting boxes. This external bus cable may also be used to connect other peripherals to the PDP-11. The maximum combined, internal and external, bus cable length is 50'.

### 6.1.7 Environmental Requirements - PDP-11/20, PDP-11/15

The PDP-11 is designed to operate from + 10° to + 50° C with a relative humidity of from 20% to 95% (without condensation).

## 6.2 PDP 11R20 RUGGEDIZED COMPUTER

The PDP-11R20 Rugged computer is available in a rack-mountable configuration which may be installed in a DEC cabinet or mounted in a customer cabinet. The PDP11R20 mounts in an EIA standard 19 inch cabinet and has tilt and lock chassis slides as standard mounting hardware.

### 6.2.1 PDP 11R20 Basic Mounting Box and Power Supply

This basic mounting box comes standard with the PDP-11R20 system and includes:

1. Tilt and Lock chassis slides

2. H720 Power Supply

3. 15' of power cord with ground wire

    For 115 V standard, three prong twist lock connector

    For 230 V three prong twist lock connector.

4. Cooling fans

5. Filters

6. Programmers Console

Approximate Size: 10 1/2'' high, 19'' wide, 25'' deep

Approximate Weight: 110 lbs

| | |
|---|---|
| Power Line Frequency: | 47-63 Hz, 380-420 Hz |
| Power Line Voltage: | 100, 115 VAC + 10% 200, 215, 230 VAC + 10% |
| Power Line Current: | 5 amps max @ 115 VAC |
| Power Dissipation: | 500 Watts max |

### 6.2.2 BAR11EC Rugged Extension Mounting Box

The rugged extension mounting box is designed for mounting up to 6 additional system units which cannot be contained in the basic Rugged mounting box. This unit contains:

1. Tilt and Lock chassis slides

2. Cooling fans

3. Filters

4. Blank front panel

5. Rugged internal and 10' external unibus cable to connect to the basic box.

### 6.2.3 Cables

All options ordered with the rugged PDP-11 must have special rugged cables ordered with them. All cables that go into this box do so by means of 1/4 turn-mil-type connectors. The convenience outlet is a 3-prong twist lock female plug

### 6.2.4 Environmental Requirements
TEMPERATURE

| | |
|---|---|
| Operating: | $0°C$ to $+55°C$ |
| Non-operating: | $-55°$to $+85°C$ |

HUMIDITY:                95% RH

VIBRATION:              Vibration applied on 3 mutually perpendicular axis.
                        5-9 Hz, 1.0'' double amplitude;9-500 Hz, 2.5G

SHOCK:                  3 shocks in each direction on 3 mutually per-
                        pendicular axis (18 shocks)

Operating:              5G, 11 msec
Non-operating:          15G, 11 msec

ALTITUDE
Operating:              10,000 feet max.
Non-operating:          50,000 feet max.

INCLINATION:            Operates in any attitude

RELIABILITY:
(at 25 C)               Processor: 22,000 hours MTBF
                        Power Supply: 33,000 hours MTBF
                        Memory: 11,000 hours MTBF
                        Computed from MIL-HDBK-217A, 1 Dec. '65

## 6.3 INSTALLATION PROCEDURE
The PDP-11 is crated for shipment to the customer site to prevent damage. In-
stallation is provided by DEC personnel at the customers site.

Computer customers may send personnel to instruction courses on computer op-
eration, programming, and maintenance conducted regularly in Maynard, Mas-
sachusetts, Palo Alto, California, and Reading, England.

## 6.4 SYSTEM UNITS AND CABLES
The following items are available for mounting standard and special peripheral
device logic into a PDP-11 system.

### 6.4.1 Peripheral Mounting Unit (DD11-A)
The DD11 is a prewired system Unit which allows standard small peripheral inter-
faces to be mounted in a PDP-11 system. It accepts standard small peripheral in-
terfaces (up to 4) such as the KL11 Teletype Control or the controller portion
(PC11-M) of the High Speed Reader/Punch. For mounting, it requires one-sixth
(1/6) of a BA11 Mounting Box.

### 6.4.2 Blank System Unit (BB11)
The BB11 consists of three 288-pin connector blocks connected end-to-end. This
unit is unwired except for UNIBUS and power connections and allows customer-
built interfaces to be integrated easily into a PDP-11 system. For mounting it re-
quires one-sixth (1/6) of a BA11 Mounting Box.