ROACH

Honeywell

LEVELS 66 & 68
SITE PREPARATION MANUAL

SERIES 60 (LEVELS 66 & 68)

SITE PREPARATION MANUAL

SUBJECT

Site Preparation for the Series 60 Levels 66 & 68 Information Processing Systems, Including Schedule, Site Selection, ac Power, Air Conditioning, Outline Drawings of Equipment, and Electrical Data

SPECIAL INSTRUCTIONS

This edition supersedes Revision 2, dated September 1977. Change bars in the margins indicate new or changed information.

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Section 1
Introduction

This manual contains the information required to plan your site for a Honeywell Level 66 or 68 information processing system. Emphasis is placed on the space, electrical power, and air conditioning requirements for a successful system installation. The electrical power and grounding systems required are discussed in detail to aid your planning. Unit requirements are given for the purpose of calculating the total requirements for your specific system, including planned growth.

This manual also contains guidelines for planning the system layout for efficient operation. Standard system configurations, equipment plan views, and specifications are also included. Table 1-1 lists user responsibilities and specifies how Honeywell helps during this process.

TABLE 1-1. SITE PREPARATION TASKS

What You Do	What Honeywell Does To Help You
1. Select the site for your system.	Honeywell's Field Engineers help you decide on possible sites (whether existing or new) and help you check the selected site for applicability of the layout.
2. Prepare the site.	Honeywell furnishes complete specifications for use by your plant engineer, architect, or outside consultants in installing the air conditioning and electrical power required for your particular system and associated peripherals. Prior to your system delivery, the Honeywell Sales Representative will audit your completed site to help ensure the successful installation of your computer system.
3. Determine a time of delivery for the system when you sign the contract. (Changes made to the contract may affect the delivery schedule and result in added cost.)	Every system component is carefully packed and readied for safe shipment from the factory to your site to meet the predetermined delivery date. Honeywell selects the carriers and the method of shipping that suits your particular requirements.
4. Accept delivery upon completion of the computer installation.	When the system arrives at your site, Honeywell's Field Engineer performs the following: • Places all Honeywell equipment components into position in accordance with your selected layout. • Installs and connects all Honeywell interconnecting signal and control cables and, where applicable, connects the ac plugs. • Checks out system by performing certain test routines. After the system is completely checked out and is performing satisfactorily, it is then turned over to you. **Note:** All equipment that is not Honeywell's or supplied by Honeywell is your responsibility.

INSTALLATION SCHEDULE

It is your responsibility to prepare the facility in such a manner that the computer system can be properly installed, operated, and maintained as outlined in this manual. In order to ensure the *timely* completion of facility work elements so that the delivery, installation, and turnover of the system may be successfully completed by the planned dates, the following guidelines are suggested.

ONE WEEK BEFORE DELIVERY DATE

CONSTRUCTION

- Install and paint all area partitions, doors and windows.
- Complete media storage facilities.
- Install raised floor, or equivalent.
- Make raised floor cutouts, as required. (Protect, as necessary.)

ELECTRICAL

- Install and test standard and emergency lighting.
- Install and test required transformers and switchgear.
- Install and test motor generator.
- Install power distribution panels. Install and label correct circuit breakers.
- Install conduit and pull wires to each unit. Install power receptacles, where required.
- Install and wire convenience outlets.
- Install and wire emergency-off switches at exits.
- Install and test earth ground.
- Install braid ground from central system area to motor generator.

AIR CONDITIONING

- Install and test system for cooling capacity and circulation.
- Install vents, registers, and filters.
- Install and test humidity and temperature recorders.
- Install chilled water supply (if required).

GENERAL FACILITIES

- Install and test fire protection facilities.
- Install and test communications equipment (data sets, telephones, remote terminals).
- Reserve area for truck unloading and for any required rigging and obtain necessary permits.
- Establish equipment delivery route through building from unloading point to computer area and check for physical dimensions. Check elevators (if used) for capacity and reserve for use.

DAY OF DELIVERY

On the delivery day, be sure that all computer areas are clean and free from dust, extraneous units, and construction materials. Be sure that electricians are available, on the agreed schedule, to connect equipment.

In addition, check the following:

- Delivery route from carrier parking space to computer area is clear for movement of equipment.
- Temporary protection for carpets, etc., has been installed (carrier responsibility).
- Arrangements have been made for disposal of packaging materials.

POST-INSTALLATION CHECKS

After installation of the computer system, the following matters should be attended to.

ELECTRICAL

- Wire and test emergency shutdown circuits.
- Verify grounding per specifications.
- Balance phase loads on motor generator and power transformers.
- Properly label all circuits.

AIR CONDITIONING

- Block cable access holes if subfloor is used for plenum.
- Balance air conditioning system for effective cooling of all units.

Make such arrangements as you deem necessary for professional consultants' service in planning your installation. Honeywell Field Engineering Representatives are available for assistance in interpreting this manual and must be contacted if any characteristic of the site does not meet the requirements shown. To help ensure the successful performance of your computer system, your Honeywell Marketing Representative will audit your completed site prior to system delivery.

It is important that you adhere to local and national code requirements in constructing your site. Reference should be made to National Electric Code NFPA 70, and "Standard for Protection of Data Processing Equipment NFPA 75." These are available from National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02110.

Section 2

Computer Site Requirements

SPACE REQUIREMENTS

The location of the computer facility should be selected with regard not only to the aggregate space, clearance, and floor loading for the computer and its peripherals, but also for air conditioning safety and fire prevention equipment, adequate power, support functions and equipment, noise levels, adequate delivery capabilities, storage space, and expansion of the system. These considerations apply equally to *new* and *old* buildings.

Outlined below are major structural requirements that should be considered prior to your selection of the computer site.

- Is space available to house cooling equipment such as the compressor, air-handling equipment, evaporators, condensers, and cooling-tower equipment?
- Is the existing lighting arrangement adequate?
- Are the availability and location of power adequate?
- Is space available for the required motor generators?
- Is the floor loading of the computer area adequate to sustain the system's weight plus any other loads that may be imposed upon it?
- Is the ceiling adequate and at least 8.5 feet high to eliminate "hot spots"?
- Do the surrounding walls and ceiling have any type of existing acoustical treatment?
- Are permanent walls and partitions located so as to minimize noise levels?
- Is the accessibility for van unloading adequate? Also, if the building (or facility) is more than one story high, is the elevator capacity adequate?
- Are any building modifications necessary prior to moving in the computer equipment?
- Is the air filtration system (air cleaners) adequate?
- Is the fire- and smoke-detection system adequate?
- Are the support functions (such as office space, media storage, and equipment maintenance areas) satisfactory?
- Are the related work areas (e.g., for tabulating equipment) suitable?
- Are the size and location of entrances and exits adequate for delivery?
- Can new equipment be added when necessary without causing radical changes to the currently allotted space?

Note:

Before finalizing your site plans, investigate the building codes for your immediate area. These often require that your drawing be approved by a locally licensed architect and/or city engineer.

SITE LAYOUT

A detailed scale drawing of the site must be made to ensure thorough preplanning of equipment location. This drawing will help ensure proper consideration of such elements as easy operator access to all parts of the system and adequate maintenance access to all cabinets.

All of the following information should be shown on the scale drawing by means of templates and notes. Where portions of the system are in remote locations, notes should show distance and relationship. Use scale templates that show the maintenance access required. Layout grid sheets and adhesive backed templates are available from your Honeywell representative.

Be sure that the site layout clearly identifies:

- Site code or codes
- Customer name
- Date of revision

ROOM OUTLINE

In drawing the room outline, follow these suggestions:

1. Block out size and shape of the computer room.
2. Show all room entries/exits as well as
   - Any door less than 7 feet high
   - Adjacent corridor size
   - Ramps, elevators, stairwells
   - Building columns
   - Media storage area
   - FED maintenance space

- All under-floor and above-floor obstructions that affect the routing of cables

3. Indicate external windows and view windows.

LOCATION OF EQUIPMENT

It is important to include all equipment related to the system on your layout drawing. If this is an add-on order, specifically identify the added equipment. In addition, show the location of the following:

- Motor generator sets/Uninterruptable Power System (UPS)
- System ground point
- Ac load centers
- Motor generator control unit
- Emergency off switches
- Communication terminals (if used)

Keep these points in mind:

1. Location of computer equipment must conform to cable-length limits as shown in Section 4.
2. Layout must be coordinated with the air conditioning to avoid conditions that can create hot spots. Do not place units directly under diffusers which produce a strong downdraft. Protect against the heat load of large window areas exposed to direct sunlight.
3. Give consideration to the location of paper media peripherals to avoid the possibility of clogging the filters of other units with paper dust.

APPROVALS

Before submission of the layout, *and* for any change in room or equipment location, the following approvals must be shown on the layout by signature and date:

- Customer Representative
- Honeywell Information System Site Manager
- Honeywell FED Representative

Be sure that any changes in plans affecting room layout are immediately shown on a revised scale drawing approved and submitted to your sales representative.

SPACE REQUIREMENTS FOR MAJOR UNITS

Minimum space requirements are set by the size of the unit and by the clearance required for operation and maintenance. Section 4 of this manual includes plan views of each unit and standard system configurations with these minimum requirements. Some overlap of maintenance clearances is permissible, but should be approved by the Honeywell Field Engineering representative. Nonstandard system configurations must be approved by Honeywell due to the many interacting constraints affecting system performance.

Check dimensions of all access doors, stairwells, elevators, ramps, and turns in corridors to be sure the equipment can be delivered to the computer room. If special rigging or special equipment disassembly is required due to building construction, this must be discussed in detail with your Honeywell Field Engineering representative at least six weeks prior to delivery.

MOTOR GENERATOR SET LOCATION

The motor generator (MG) sets should be located near the computer system; however, unless a special soundproof enclosure is provided, they should be in an adjacent room where its operating sound level will not disturb personnel. Allow at least 3 feet (0.9 m) clearance on all sides of each MG set for maintenance. The room must have clean ventilating air at an ambient temperature not to exceed 100°F (38°C) with sufficient air circulation or other heat-absorbing capacity to dissipate the heat (see Section 4).

The "B" model motor generator sets are mounted on a self-supporting fabricated base with three mounting feet in contact with the floor. This threefoot suspension automatically distributes the weight so that no shimming is necessary on a nominally level floor.

The "C" model motor generator sets use four mounting feet. These feet have integral adjustments for leveling the unit.

TELECOMMUNICATIONS TERMINALS AND MODEMS

The selection of the proper telecommunication terminals for your applications requires careful consideration of many cost/performance factors. Your Honeywell sales representative will assist with information on terminals compatible with our communication interfaces.

Your decision on the required quantity and type of modems to be used must be made early enough to ensure the delivery and installation of terminal equipment prior to arrival of your computer system.

Local equipment should be located within 40 feet (12 m) of the Front-end Network Processor. Consideration must be given to the maintenance access, power, and cable requirements of each type of modem used.

MAINTENANCE AREA REQUIREMENTS

A maintenance area must be provided for Field Engineering representatives to work and the storage of spare parts and maintenance equipment. It should be an enclosed area adjacent to the comuter room at the same floor level. If necessary, a ramp suitable for movement of test equipment must

be provided. For a single system, the area of the room must be at least 200 sq ft (18.6 sq m). For a dual system, the area must be 250 sq ft (23.2 sq m).

In addition to the above area, a space approximately 5 feet (1.5 m) square must be provided, near the computer system, for a Board Tester. (See Section 4 for details of space and power for this unit.)

The following facilities must be provided in the maintenance area:

- Workbench with wooden top
- Standard office desk
- Four-drawer file cabinet
- Desk chair and steel posture stool
- Two convenience outlets: 120V, 20A
- Telephone
- Standard office-level lighting

MEDIA STORAGE REQUIREMENTS

For successful system operation, media must be stored conveniently and under proper environmental conditions. Depending on the size of your computer installation, space must be allotted for storage of cards, printer paper, disk packs, printer ribbons, and other supplies. Savings in operator time over the planned years of system use can justify dedication of sufficient storage space convenient to the point of use.

Consider fireproof storage for critical disk packs. The amount of space to be allotted for disk pack storage depends upon the total number of disk packs required by the system and the possible subdivision of these disk packs into two or more storage areas. Users normally desire a disk storage area within the processing center for the current disk packs. You may want to duplicate current disk packs as a safety factor in case of fire or loss of information through operator or machine errors. If duplicate disk packs are used, provide a second disk pack storage facility in a remote area.

The disk packs are stored in any of several size cabinets (housing 8 to 12 disk packs per cabinet). The recommended storage positions for disk packs is flat in a horizontal position.

The following areas for media storage must be temperature- and humidity-controlled:

- A vault containing the daily operation disks and tapes
- A storage area for bulk paper stock and other supplies
- An input/output preparation area for storing and handling batches of data material which could also contain the machinery (keypunch equipment, burster, decollator, and other document-handling devices) necessary to prepare the input/output data

The environment of the media storage area should be the same as that of the computer area. Dirt control should be considered as well as temperature and humidity. If bulk storage cannot be provided in this environment, media must be brought to the computer room to stabilize before use. Humidity stabilization in stacks of paper is a matter of *months*, not hours. Careful consideration must be given to critical applications.

ROOM CONSTRUCTION

FLOOR REQUIREMENTS

The system is designed for under-floor access of logic and power cables. The customer must provide a raised floor or its equivalent. The raised floor must meet the following requirements:

1. Minimum recommended height from top of raised floor to ceiling of 8.5 ft (2.6 m).
2. Minimum space between subfloor and raised floor of 8 in. (20 cm) when used with overhead air conditioning, 12 in. (30 cm) when used as an air plenum. (Extra air handling capacity must be provided if this minimum is not met.)
3. Ramp rise not more than 20°
4. Level within ¼ in. (.6 cm) within 10 ft (3 m).
5. Floor loading capacity:
   - Castor — 1500 lbs/sq in. (100 kg/sq cm)
   - Leveling pad — 500 lbs/sq in. (35 kg/sq cm)
   - Maximum load of any single unit — 200 lbs/sq ft (1000 kg/sq m) (weight of unit ÷ area actually occupied by the unit)
   - The distributed floor load for the entire system may be calculated by adding the weights of all units to be installed, including auxiliary equipment, and dividing by the total area of the computer room.

CAUTION

On false floor section where flooring material contains metal beading, the beading must be insulated from the equipment frame.

If carpeting is used, it must be of a type specifically manufactured for computer room application, and be rated at 2.0 kV or less as measured by AATCC Spec. #134.

CABLE ACCESS HOLES

Drawings or templates of each cabinet base are available and should be used at the site to locate holes for system cable access and ac power cables. Using the layout drawing as a guide, these templates should be used to lay out the computer room floor so that the various access holes can be cut prior to

delivery of the system. Hole edges must be prepared in a way that will prevent cable damage. Floor panel manufacturers can provide vinyl angle strips for lining cutouts.

The drawings or templates will be provided by your Honeywell Field Engineering representative at the time required for your site construction.

CAUTION

Care must be taken during the period between cutting floor holes and installation of the equipment to ensure that the holes are temporarily covered to prevent accidental injury to personnel.

After system installation on sites with underfloor air conditioning, the ac power and logic cable access holes must be blocked off in appropriate manner with nonflammable material to prevent uncontrolled air loss. This is essential to balance air flow effectively and to prevent air at too low a temperature from entering the units.

LIGHTING

An intensity of approximately 861 — 1076 lux (80 — 100 foot-candles) at desk level is adequate for the computer area. Fluorescent lighting is preferred because it generates little heat and illuminates the work area evenly. The design and position of the lighting fixtures should take into account the requirement that personnel operate switches and read indicators that must be free of glare. Flush or recessed fixtures are suggested since they are attractive and are less likely to collect dust than hanging fixtures.

Direct sunlight should be avoided because a lower level of illumination is needed to observe indicator lights on equipment. Windows that do not face north should be fitted with Venetian blinds, glazed with tinted glass or treated with other material to protect against sunlight.

Even when not required by code for certain areas, some type of emergency lighting should be provided. Emergency lighting can be of the ordinary battery-operated type that turns on automatically when power to the main lighting system is interrupted. These units are wired to and controlled by the lighting circuit and are activated by a relay or a light sensor.

SOUNDPROOFING

Compared with a clerical office containing nothing more than light office machinery, a computer room has a higher sound level. It is normal, therefore, to line the ceiling with sound-absorbing tiles, which may also form a false ceiling to conceal other services. Local circumstances may indicate treatment of the walls also. Acoustic treatment of the data processing area ensures a comfortable working environment.

Structure-borne vibration and consequent noise in rooms below or near the computer room is negligible unless the floor is in very poor condition. Raised floors may require extra support jacks at strategic places to prevent transmission of vibration along their surface.

Airborne computer noise reaching other rooms can be reduced to almost any required level by acoustic insulation within the computer room; however, acoustic tiles alone do not perform this function. The heavier the wall and the freer it is from cracks and openings, the better. Open doors destroy acoustic insulation.

Fan noise from the air conditioning is usually less than the computer-generated noise but in some installations, where the fan is close to the room, some special treatment may be required.

AC POWER SYSTEM REQUIREMENTS

The primary power source for the computer system should be completely isolated from other power systems in the facility. This will minimize the electrical interference caused by motors, fluorescent lights, and on/off electrical loads found on most utility systems.

The central system is isolated by the motor generator sets or by a customer-provided Uninterruptable Power System.

Similar isolation is needed for peripheral equipment. To obtain this degree of isolation, a separate transformer is required to provide power to the peripheral equipment. The transformer must be adequate to handle the load plus future computer expansion. No other building loads should be supplied by this transformer.

PRIMARY AC POWER SPECIFICATION

The electrical power supplied to the information processing system must meet the following requirements:

1. 60 Hz nominal with 60.5 Hz maximum and 59.4 Hz minimum frequency.
2. 208, 240, 440, or 480 V ± 10% for the motor generator (MG) set. The voltages available determine the MG set used. (See Section 4.)
3. 120/208 V, five-wire, four-wire wye plus ground, for the peripheral equipment with limits of 208 V ± 10%.
4. A total harmonic content of less than 10% of the fundamental frequency.
5. Three-phase with a maximum phase variation of 5% from the nominal 120° relation.

Installation in facilities that have 50-Hz ac power requires frequency conversion. Two or more MG sets are required, at least one for the central computer system and one or more for the peripheral equipment. Regardless of the system size, central system equipment and peripheral equipment must not be connected to the same MG set. (Refer to Figure 2-1.)

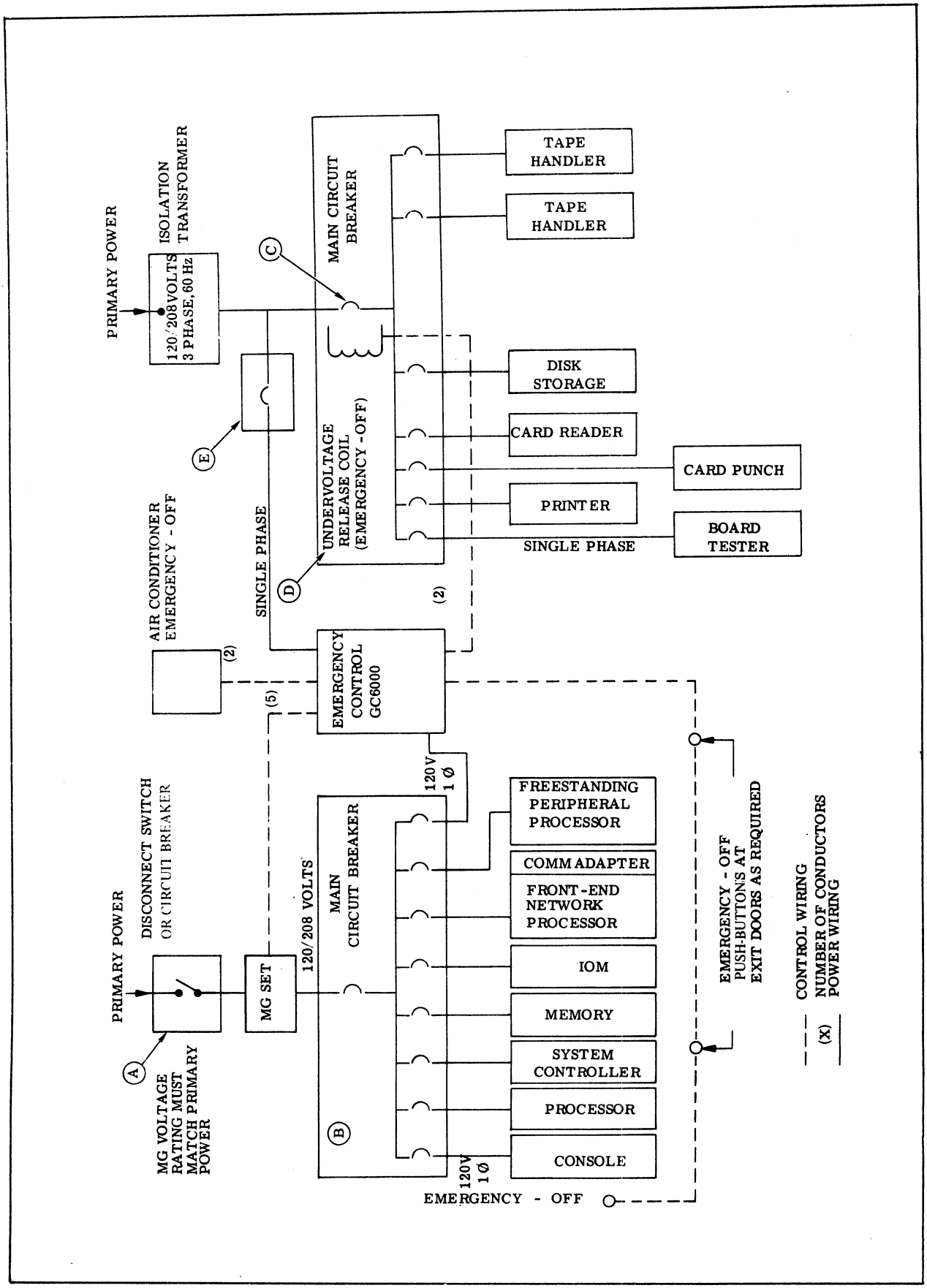


Figure 2-1. Power System Diagram

If your system availability criteria necessitate an Uninterruptable Power System, your Honeywell sales representative will assist in obtaining interface requirements. Refer to "Motor Generator Set" later in this section for possible elimination of redundant protection features.

LIGHTNING PROTECTION

To ensure the safety of equipment and personnel, primary power transformers must be protected by lightning arrestors. It is highly desirable that similar protection be provided at the service entrance to the building. These arrestors will reduce the possibilities that excessive voltage and currents due to lightning strikes will seek some indeterminate, low-impedance path to ground, such as building metallic structures or equipment cabinets.

AC CONVENIENCE OUTLETS

All convenience outlets in the computer room must be on a feeder separate from the computer system to prevent electrical noise interference. Sufficient outlets must be provided so that no unit of the computer system is more than 15 ft (4.6 m) from an outlet. Convenience outlet power is 120 V, single phase, 60 Hz, 15 A capacity. A three-wire system must be used with the ground at the same potential as the computer equipment frame ground.

PHASE BALANCING

In a three-phase, wye-connected system with grounded neutral, phase imbalance currents flow in the neutral wire. High neutral return currents can generate noises which may be reflected back into the computer system. To avoid problems, attention must be given to balancing loads on the motor generator set and on the power distribution transformer.

Values given in Section 4 for amperes per phase are not exact enough for phase balancing. Manufacturing variables exceed the required tolerance for good phase balance. Therefore, it is necessary to measure exact current per phase on each unit and calculate an optimum balance by exchanging values. The units should then be reconnected and the total current per phase measured. This, of course, must be done separately for MG power and for peripheral power.

Keep in mind that some peripheral equipment have phase-sensitive motors. This must be taken into account when trying to switch loads to balance the utility power.

AC POWER REQUIREMENTS BY UNIT

Section 4 of this manual includes an installation outline drawing for each unit in your system. These include typical values for:

- Amps per phase
- kW
- kVA

These values are for general information only to estimate power load. They may differ slightly in each unit due to manufacturing tolerances. *They have not been derated for duty cycle.* Size and duration of starting current is shown where significant. To meet NFPA 70 Electrical Code, the primary distribution must be sized by nameplate rating.

The value shown for circuit breakers and wire size meets NFPA 70 code. Follow your local code if larger sizes are required. The quantity of wires shown includes the required "green wire" or safety ground conductor.

MOTOR GENERATOR SET

The motor generator set will normally be shipped to your site one month prior to arrival of the system. It should be installed, wired, and tested by your electrician or contractor before system installation.

The motor generator must be selected in accordance with the primary power provided at the site and with the system load taking into account line losses and future expansion. Line losses must be considered if the load approaches the rating of the generator and the generator is remotely located.

Motor generator sets are available with ratings listed in Section 4.

A properly designed Uninterruptable Power System (UPS) may eliminate the need for the Motor Generator and the Isolation Transformer. Honeywell Engineering will evaluate UPS design for this aspect upon submission of complete specifications of the UPS and its loads. The MG Control Unit (or equivalent) will still be needed for emergency control purposes.

AC POWER DISTRIBUTION

Figure 2-1 shows a typical power system diagram. It is the customer's responsibility to supply and install the following materials. (See Section 4 for required breaker capacities.)

- Disconnect switch or circuit breaker for the input to the motor generator set (Reference A).
- Distribution panel and circuit breakers for central system (Reference B). Rating of main breaker is determined by total load.
- Distribution panel and circuit breakers for peripheral equipment (Reference C).
- Main circuit breaker with a 24-volt dc undervoltage release coil for the peripheral distribution panel. Rating of circuit breaker is determined by total load (Reference D).
- 10-A single pole circuit breaker for MG Control Unit (Reference E). The MG Control Unit is connected to both the motor generator output and primary power as indicated.
- Primary power wiring and conduit from distribution panels to each central system unit

and each peripheral unit. This includes connecting the input power to the disconnect switches on each unit. Order and install sufficient wire for a 2-foot (0.6 m) stubout length in each unit.

- Safety ground to circuit breaker load centers, and each unit in the computer system. This is the fifth wire indicated in Sections 2 and 4, and it must be green or green-yellow.
- Control wiring from MG Control Unit to motor generator, distribution panels, and emergency-off buttons. See section on "Emergency Control Wiring."
- Ducts and/or cable trays for interconnecting logic cables if required by electrical code or site layout.
- Any transformers that may be required to provide an isolated power circuit for the peripherals independent of other building power.
- Mounting for distribution panels adequate to isolate them from each other and from any contact with building ground.

Notes:

1. Aluminum wire is not acceptable for this application.
2. Certain peripherals are equipped with ac power cords (see Section 4).
3. The 10-A breaker must be connected to the utility as shown in Figure 2-1 (Reference E) to permit the air conditioner to start up automatically after a power line outage. When power is lost, the main circuit breaker in the peripheral load center must be manually reset to restore power to the devices it supplies. If the MG Control Unit took power from the peripheral distribution panel, air conditioning is not restored until the main breakers are reset.
4. All runs in metal conduit must be isolated for their entire length from building ground and from each other. Insulated conduit material may be required to meet this specification. Plastic bushings are required to electrically isolate conduit from the computer units (see Figure 2-2).

GROUNDING SYSTEM

Successful operation of large-scale computer systems is dependent upon proper grounding. If proper grounding techniques are overlooked, ignored, or misunderstood, the system may perform poorly. This results in costly troubleshooting and maintenance.

The most important reasons for grounding electronic equipment are:

1. To provide a low-impedance, fault-return path to protect personnel and equipment in the event of ac power fault to ground. The objectives are to keep the voltage potential between equipment and adjacent structures low enough for personnel safety and to cause the power system protective devices to open before equipment is damaged by the power fault.
2. To provide a low-impedance path to earth for lightning current with sufficient shunting effect to keep the potential at the equipment frame within safe limits.
3. To provide a common equipotential plane for the overall computer system installation. The objective here is to keep all of the equipment at the same potential by shorting out equipment potential differences (caused by electric fields of many frequencies) through the same low impedance of a single-point ground system.
4. To provide a low-impedance path to earth for static electricity which might otherwise build up enough potential to spark, thus causing noise, fire, explosion, or system malfunction.
5. To provide a low-impedance path to earth for protection against external high-frequency noise (RFI/EMI).

It must be understood that while all "ground" circuits are eventually connected to "earth" ground, ground conductors should not be used indiscriminately for the various ground functions. Signal grounds must be isolated from other grounds (conduit, wall breaker panels, raised floor supports, etc.) to prevent the interaction between signal paths and noise.

EARTH CONNECTIONS

The most important part of any grounding system is the actual connection to earth. The low-resistance path to ground (earth) is dependent upon the adequacy of this connection, and the design objective should be to reduce this resistance to as near zero as possible. A maximum of 25 ohms is allowed as measured with a ground ohm megger. Your power company will probably be willing to make this measurement.

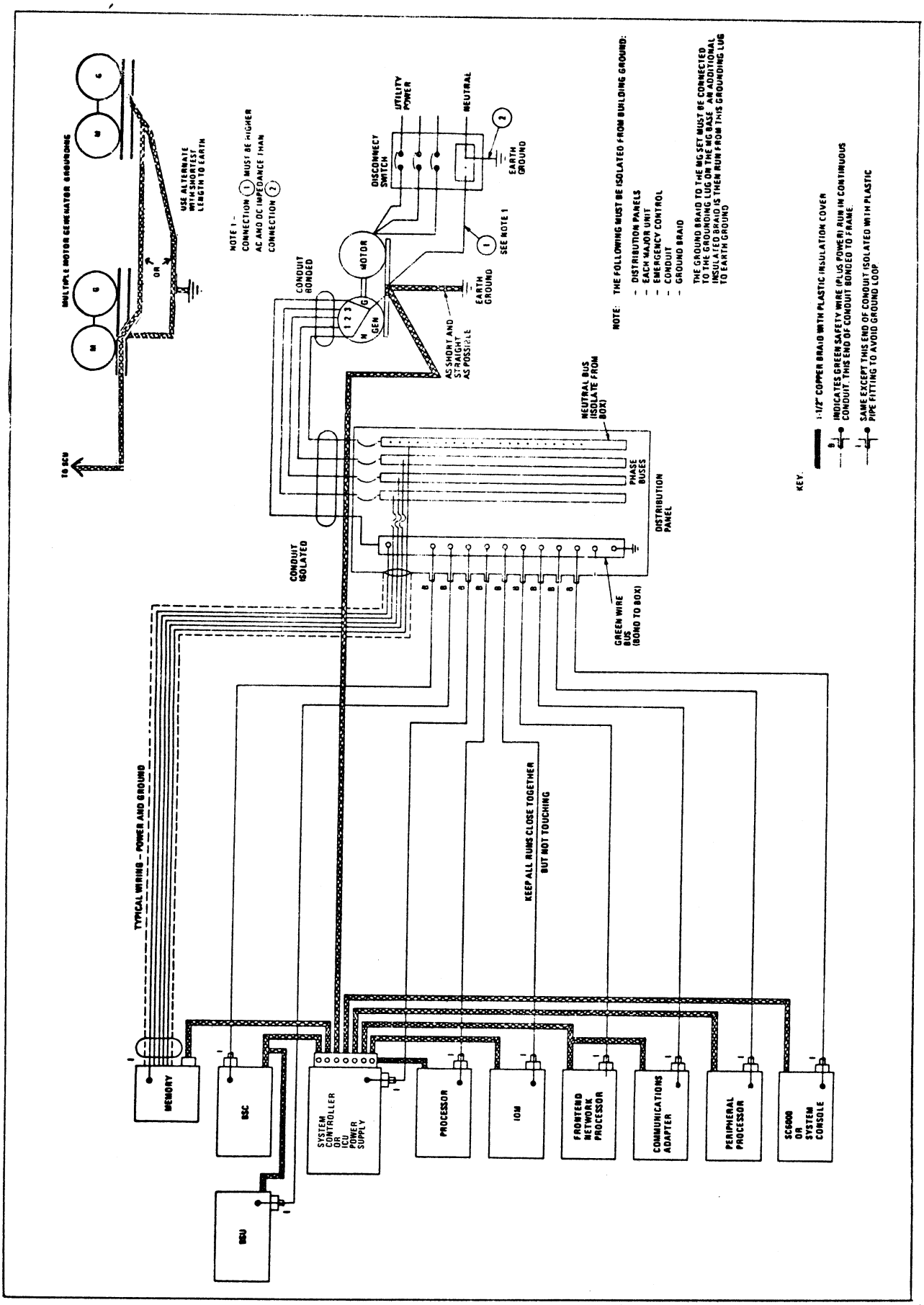


Figure 2-2. Ground System — Central System

Earth grounds are usually of two types:

1. Connections to *underground metal* water piping systems, metal frame structures of buildings, or other metal structures that are in good contact with the earth. In many large structures, the building or architectural ground is most often used, since it is the most readily available point for equipotential planes.
2. Connections to ground rods or plates which have been placed in the earth for the specific purpose of providing an adequate ground connection.

Experience indicates that continuous underground water piping systems can, depending on soil conditions, provide a resistance to ground of less than 15 ohms. When considering water piping as ground, precautions must be taken to ensure that the metal piping does not connect with plastic piping just outside the building.

It is significant that a resistance path to earth of less than 25 ohms can be obtained by using multiple ground rod electrodes. In some instances, it may be necessary to use this method to get an acceptable ground.

Regardless of the type of ground conductor used, many conditions affecting the ground must be considered in attempting to make an adequate ground connection. The effectiveness of the ground electrode is determined by:

- The characteristics of the electrode
- The resistivity of the soil around the electrode

Some of these factors are subject to change over a period of time. This must be considered in evaluating the effectiveness of the ground connection (for example, the soil condition will likely change with the change from a wet to a dry season).

Underground piping used for grounding must have the following characteristics:

- At least 10 ft (3 m) of metallic length underground.
- Continuous and not excessively corroded.
- Must not be coated or wrapped with insulating material.
- Deep burial to reduce the effects of seasonal soil changes.

Where grounding to water piping systems is not practical or not permitted by local code, rod-type electrodes driven into the ground can be used. These are less expensive than other types of grounds such as buried plates or grids, but because they are usually shallow, they may be more susceptible to changes in soil resistivity caused by climatic changes.

In most cases, two or more rods in parallel can be used to decrease ground resistance; however, primary consideration must be given to the spacing of the rods. Approximately 90 percent of the potential drop from the ground electrode takes place within 10 ft (3 m) of the electrode. Rods spaced closer than 6 ft (1.8 m) will appear as a single rod with almost no reduction in ground resistance over that obtained with a single rod. Because of this characteristic, the ground rods should be spaced at least 20 ft (6.1 m) apart.

Ground inspections should be a normal part of your building maintenance routine. Ground connections should be checked on a periodic basis for tightness, damage, and corrosion. Inspection should be performed at least every six months.

"GREEN[1] WIRE" SAFETY GROUND

1. Every equipment power run must have a separate, continuous, insulated wire for use as a frame (protective) ground (sometimes referred to as the "green wire" ground). It is run inside the conduit or power cord with the conductors and ac neutral. The frame ground wire must be securely fastened to the frame ground bus or terminal provided in the equipment and to the power distribution panel frame or ground bus (NOT the ac neutral bus). See Figure 2-2.
2. A single-point ground system must always be used with all "green wire" grounds tied together at the circuit breaker load center. The load center panel should have a copper ground bus to which all equipment grounds can be attached. The grounds for the central system and grounds for the peripheral must *not* be tied together at the load center panels.
3. The generator neutral must be connected to the building service ground. The connection to this neutral must be made to the ⅜-inch grounding bolt provided on the frame beneath the generator or at terminal ITB inside the control box.
4. In all equipment, the protective ground (green wire) conductor is connected directly to the ground lug inside the unit's ac junction box. DO NOT connect it to the ac neutral bus or to the system ground lug (braid connection).
5. Conduits are not acceptable as ground for the computer system. For safety reasons, all conduit runs should be bonded at the primary power end. All paint, coatings, or similar insulating materials must be removed from boxes, panels, etc., before the conduit is attached.

CENTRAL SYSTEM SIGNAL GROUND

In spite of the grounding practices described previously, the dc interface between the central system equipment makes ground loops (current loops) inher-

[1]The protective ground wire can be either green or green/yellow.

ent in the central system. To minimize the inductance of these loops, with the high frequencies involved, low-impedance conductors (tinned copper braid) are used to establish a system ground network. This ground network provides the low-impedance connection required to keep the reference ground of all equipments in the central system at a common potential. See Figure 2-2.

Each central system cabinet has a low-impedance conductor (1½-in. tinned copper braid) connected at the cabinet ground bracket. The other end of this conductor is terminated at the system controller cabinet ground bracket.

An additional insulated braid is then connected from earth ground to the base ground stud on the MG set. This ground braid material is provided by Honeywell as part of the system installation material. Normally it is installed by Honeywell personnel at the time of system installation. Due to the probability of remote location of the motor generator set, requiring routing of braid through wall or floor openings, the customer should install the ground braid from MG to system controller. The material will be provided in advance of system delivery.

COOLING SYSTEM REQUIREMENTS

Since computer room construction for installed computer equipment can vary greatly, each air conditioning system should be analyzed individually. The temperature and humidity of conditioned air supplied to the room and the air distribution within the room are extremely important factors in obtaining satisfactory performance of the computer system. Use the following parameters as a guide in the design and installation of computer room air conditioning.

1. A design point of 73°F (22.8°C) and 50% relative humidity is recommended. However, the design point can vary between 68° to 78°F (20° to 25.6°C) and a relative humidity of 40 to 60%. But, when the design point has been selected, the temperature and humidity in the room as measured at the breathing line (5ft 4in.[1.6 m] from the floor) should not fluctuate from the design point by more than ±2°F and ±5% relative humidity, either during operation or when the computer is completely shut down.
2. The equipment requires a clean atmosphere. Corrosive and dusty atmospheres, such as those present in steel mills and chemical plants, are not considered normal. The room should be under positive pressure with filtered input air. The humidifier, when required, can be located in the supply air stream if care is taken to ensure against wetting of computer units. A well-trapped dry stream humidifier is recommended.
3. The equipment is designed to operate satisfactorily with atmospheric pressures of 23 in. (584 mm) of mercury or greater. This is equivalent to an elevation of approximately 7500 ft (2286 m) or less under normal atmospheric conditions. Magnetic tape units require a high altitude kit for operation at elevations greater than 4000 ft (10,160 m).
4. In addition to providing the air conditioning and humidity control of the computer, the air conditioning system must also provide a comfortable working environment for personnel. For this reason most facilities are designed for 73°F (22.8°C) and 50% relative humidity, which is also the acceptable range for computer operations.

COOLING SYSTEM CAPACITY

It is essential that the air conditioning system be designed by a competent engineer to ensure consideration of all factors determining air conditioning system capacity.

The heat loads — in thousand Btu per hour — for each unit of the computer system are shown in Section 4 of this manual. This rating is derived from the kilowatt rating of the unit. Derating for intermittent duty cycle is not recommended.

Be sure that calculations for system capacity give adequate consideration to the following:

- Growth in the computer system
- Other electronic equipment in the room
- Personnel in the room
- Outdoor air for ventilation
- Roof, wall, and window heat loads
- Lighting load
- Humidity control

It is suggested that the walls of the room be adequately vapor-sealed to reduce operating costs and moisture problems.

AIR FLOW REQUIREMENTS

All equipment is designed for forced air cooling by means of blowers located within each cabinet circulating room air through the cabinet.

Air distribution in the data processing room may be through overhead ductwork or plenum, or underfloor ducts or plenum. Careful consideration must be given to the placement and design of air outlet grilles and the air returns to ensure proper air flow within the room. Air flow from the air conditioning system must not interfere with air flow in the equipment.

In the underfloor air distribution system, conditioned air is supplied to an underfloor duct work or plenum. Distribution to the room is through ad-

justable grilles located so that cold air mixes with room air before being taken into the computer cabinets by the internal blowers. Grilles should permit a high-volume, low-velocity pattern and must be equipped with adjustable dampers.

In the overhead air distribution system, the incoming air should enter the room through diffusers which will spread the air throughout the room. Diffusers must be of the adjustable air pattern type and must be balanced to provide a distribution of air which will eliminate hot spots. The ceiling height must be at least 8½ ft (2.6 m). Diffusers must not be located above perforated or "egg crate" ceiling sections due to the difficulty of balancing air flow through these materials to eliminate hot spots.

MONITORING TEMPERATURE AND HUMIDITY

Continuous monitoring of installation temperature and humidity conditions is recommended. This can best be accomplished through the use of recording instruments that provide a continuous visual record of the conditions in the computer room. As a result, if the air conditioning requirements are not met, a visual record is available to indicate the extent and duration of the undesirable condition. A quick check of the record indicates whether a drying-out period is required and, if so, its duration. In some cases, the temperature and humidity recording instruments may save computer downtime.

Direct-reading instruments with seven-day charts should be used to monitor temperature and humidity conditions. These instruments should be placed so as to satisfy the following conditions:

1. At the breathing line, 5 ft 4 in. (1.6 m) above floor.
2. Not in line with air stream from distribution grille.
3. Not in line with air discharge from computer equipment.

The recorder should satisfy the following criteria:

- Range — The relative humidity range should be 0-100%. The temperature range should be 0° to 100°F (-17.8° to 37.8°C).
- Accuracy — Relative humidity reading should be accurate to within ±2% of the total span; temperature reading should be accurate to within ±1% of the total span.
- Period per revolution — Seven days.
- Drive — Mechanical (spring wound), or electrical: 120 Vac, 60 Hz.
- Mounting — The recorder may be portable or permanently mounted.

CONTROLS AND ALARMS

Even a short period of overheating while the system is operating can cause component damage and system malfunction. Problems may also be experienced if the temperature entering the units drops below the recommended limits.

A well-designed control system is essential to eliminate these causes of lost system operating time. Controls should be tamper-proof and should be located as appropriate for temperature measurement. A method of capacity modulation control is suggested to meet the temperature and relative humidity variation permitted.

Alarms should be provided to alert the system operator when the environment approaches the operating limits of the computer system. If equipment is left running unattended, or if no alarms are provided, automatic controls are required which will shut down the system when temperature or humidity exceeds specifications.

AIR CLEANING

Minimizing airborne dust improves the efficiency of the air conditioning system, reduces the frequency of cleaning equipment and media, and improves computer system reliability. Mechanical air filters will suffice unless the installation is subject to corrosive gases, salt air, metallic dust particles, or other unusual conditions. The air filters should have an efficiency rating of not less than 20% by the Bureau of Standards discoloration test. The filters must meet UL and fire code standards (refer to NFPA 90A publication[2]).

Electronic air cleaners are highly recommended where clean air is a major problem. They require special application engineering to avoid electromagnetic interference with the computer system. Honeywell offers a complete line of electronic air cleaners which can be installed by your air conditioning contractor. For direct information and assistance in sales or service contact:

Electronic Air Cleaners G2122
Honeywell Inc.
Honeywell Plaza
Minneapolis, Minnesota 55408

BALANCING

After the system is installed and operating, the air supply dampers must be adjusted to balance the temperature throughout the room. Care must be taken to locate and eliminate hot spots. It is suggested that an independent firm specializing in air balancing be employed to balance the room and provide certified test results.

In large facilities containing more than two systems, different "design point" temperatures may exist at remote areas of the room. This will cause no

[2]Available from the National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

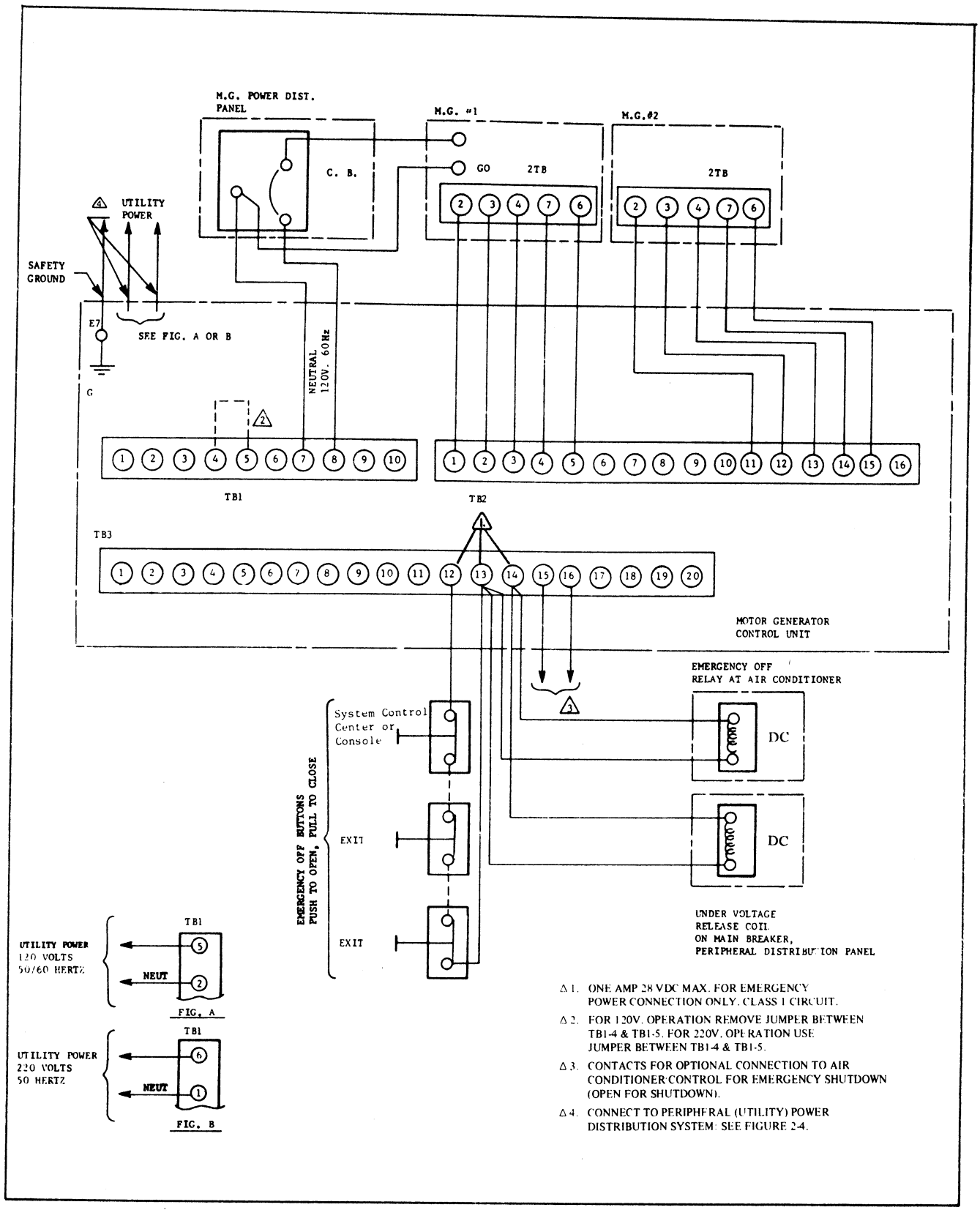


Figure 2-3. Motor Generator Control Unit

problem as long as at any one measurement point the temperature does not change more than previously described as allowable.

MAINTENANCE

A reasonable level of dirt and dust control is important to satisfactory system operation. To avoid raising dust that will clog the air conditioning system and computer filters, a tightly sealed vacuum cleaner with a good filter is recommended for cleaning the computer room. Floors can be swept with an oiled mop.

Also, a regular schedule of maintenance of filters in the air conditioning system must be established. Periodic cleaning of the subfloor area is recommended to prevent accumulation of dirt and debris. Impregnated mats at each entrance reduce dust brought in from other areas on the soles of shoes.

SAFETY

EMERGENCY POWER-OFF WIRING

The National Electrical Code NFPA 70 and the electrical code in many cities require each exit from the room to be equipped with a switch that will cycle off all power to the system and to the air conditioning in an emergency situation.

The customer should supply appropriate emergency-off switches for the exit doors.[3] An emergency-off switch is supplied on the system console or system control center. The control wiring for these switches is supplied and installed by the customer. The power to operate the emergency-off circuit is obtained from the MG Control Unit (see Figure 2-3).

Operation of an emergency-off switch at the console or other location causes the emergency control to:

- Trip the main circuit breaker in the peripheral equipment load center through the 24-V dc undervoltage release coil
- Turn off motor generator set
- Turn off air conditioning

MG CONTROL UNIT WIRING CONTROL CONNECTIONS

The control connections for all functions of emergency control and motor generator control are shown in Figure 2-3. No. 14 wire can be used for connections. Both ends of the control wiring must be permanently tagged to identify the connections to be made.

The emergency-off switches are to be wired in series and the site layout may dictate the best arrangement to do this. One method would be to run two wires from each emergency-off switch to the MG Control Unit and make the necessary series connections inside the MG Control Unit case. An emergency-off switch *must* be located at each exit/entrance door.

The National Electrical Code (NEC) NFPA 70 classifies the emergency-off circuit wiring connecting the MG Control Unit to the emergency-off switches and to the devices disconnecting main service power to the computer room (and to the air conditioning system) serving the computer room as Class 1 remote-control circuits to safety-control devices. The wiring method for Class 1 systems must comply with Article 725 of the (NEC) NFPA70, or with local code requirements for remote control safety circuits where such local code differs.

EMERGENCY LIGHTING

Some local codes require a special battery-operated lighting unit that will automatically illuminate an area in case of power or lighting circuit failure. These units are wired to and controlled by the lighting circuit. Even when not required by code, it is recommended that such lights be installed.

GENERAL PRECAUTIONS AND PERSONNEL TRAINING

The computer room and tape library should be monitored during nonoperating periods for fire and "over-temperature" conditions. Special precautions should be taken if equipment is left with power on.

Protection should be taken against equipment damage due to condensation or leakage from any overhead pipes.

Site personnel must be thoroughly trained in the function of all fire detector equipment, desired responses to alarm conditions, and the use of all available extinguishing equipment. This training must include both the capabilities and the limitations of each available type of extinguisher.

Training should include, but not be limited to:

- Emergency telephone numbers
- Emergency power shutdown procedures
- Location and use of available fire extinguishing equipment
- Special instruction on extinguishing a fire in data processing equipment
- Personnel evacuation procedures

FIRE PROTECTION EQUIPMENT

Portable carbon dioxide, Halon 1301, or Halon 1211 fire extinguisher types of suitable size and number should be provided in the computer room. These extinguishing agents are nonconductors of electricity and are for Class C fires (may be applied to energized electrical equipment). The

[3]The switch should be activated by a push-to-open/pull-to-close mechanism, be UL listed, and have normally-closed contacts rated at 5 A, 125 V.

extinguishers should be provided and maintained in accordance with NFPA No. 10-1975, or in accordance with prevailing local code.

While your selection of one or more of the extinguisher types will be used as the primary extinguishing agent, it is advisable to have a standpipe or hose unit within effective range of the system area as a secondary extinguishing agent for Class A hazards (paper or other solid combustible materials).

Local fire protection codes or fire insurance regulations may require the installation of automatic extinguishing systems. If this is a requirement, one of the following systems is recommended:

1. *Automatic HALON 1301 Total Flooding System*

   An automatic total flooding HALON 1301 system may be used to provide complete machine-room protection. The system requires automatic early detection of fire and timed release of the 1301 extinguishing agent. The system must be engineered for the specific area to be protected in accordance with NFPA No. 12A-1973, Halogenated Extinguishing Agent Systems — Halon 1301.

2. *An Automatic Sprinkler System*

   Installed in accordance with NFPA No. 13-1976, Installation of Sprinkler Systems.

DETECTION AND ALARM SYSTEM

The Commercial Division of Honeywell Inc. can provide complete custom-designed Fire Detection and Alarm Systems to meet all requirements for computer room protection. The system may include ionization-smoke detection, heat detection, alarm annunciation, alarm signaling, and interface to new or existing fire alarm equipment as well as tie-in to fire extinguishing systems. Honeywell system specification bulletin SES-3, 77-6815, is published as a reference data source for computer room fire detection design and can be obtained from:

Honeywell Inc.
Honeywell Plaza
2701 Fourth Avenue South
Minneapolis, Minnesota 55408

Section 3

Site Status Prior to System Delivery

Honeywell Information Systems wishes to make the period of time between system delivery and turnover to you for production use economically brief. Each element of installation and testing is carefully planned to ensure reliable system operation from the first day of use.

An essential factor in achieving this goal of successful installation is the status of site preparation at the time of system arrival. Your help in assuring the work status described in this section will save you money by reducing the complexity of the contractor's work and will prevent damage to system components from extra handling or improper environment. If any of these elements cannot be completed prior to the date of system delivery, the Honeywell Sales Representative must be notified.

MOTOR GENERATOR SET

The motor generator set will normally be shipped to your site one month prior to arrival of the system. It should be installed, wired, and tested before system installation.

AC POWER WIRING

It is very difficult and costly to install the ac power wiring after the computer system is delivered to your site. To minimize physical problems and to reduce delays in installation, all ac power conduit, wire, and cable should be in place, under the floor, prior to system arrival.

CABLE ACCESS HOLES

As with ac power wiring, it is very difficult to cut cable access holes with the system in place. All floor holes necessary for power and logic cables must be cut prior to system arrival.

AIR CONDITIONING

It is essential that the air conditioning system be installed and tested prior to the installation of the computer system. All dust in ducts and plenums must have been blown out and removed from the room. Be sure dirt from subsequent floor, wall, or ceiling work will not be blown into the computer equipment or plenums. Heavy building paper can be taped over the plenum holes to prevent entry of dust and dirt.

The cooling capacity of the air conditioning system must be tested *before* installation of the computer to prevent serious damage to components from overheating. Even temporary loss of cooling during operation of the computer can cause hot spots, damaged parts, and extensive lost time.

Test carefully for condensate leakage.

Final balancing of air flow and temperature must be done after all computer units are in place and operating.

COMMUNICATION TERMINALS

Communication terminals should be installed prior to system arrival to minimize the number of different groups working onsite and to avoid delays in system testing.

ASSURANCE REVIEWS

During the course of site planning, site preparation, and system installation, Honeywell will conduct periodic progress reviews with your facilities personnel or contractor to assure that planning and preparations are proceeding in a manner that will result in smooth, efficient installation and proper system performance. Every effort will be made during these reviews to identify and correct any misinterpretations of requirements that could result in costly rework and unnecessary expense.

The failure of Honeywell to detect or notify you of any nonconformance to these specifications does not relieve you of any contractual responsibilities that you may have with respect to site preparation of system installation.

During the facility planning phase, a Honeywell Field Engineering representative will review the site preparation plans that have been made by your facilities personnel or contractor. Your Honeywell representative will evaluate these plans to ensure their conformance with the requirements of the computer system you have selected. Details of air conditioning, flooring, electrical power, grounding, and safety will be considered. The Honeywell representative will recommend changes, if necessary, to help achieve the specified results.

A review will be made shortly before shipment of the system to make sure that all is in readiness for an efficient and complete installation. Experience has shown that it is to your advantage to have all site preparations completed before receiving your system. The Field Engineering representative will, with the help of your facilities personnel or contractor, examine your preparations. If work is not complete, he or she will work with your representative to arrive at a new schedule for completion and shipment of your system.

Your active assistance in these reviews will be greatly appreciated. Their purpose is to ensure your satisfaction with the performance of your Honeywell computer system for many years to come.

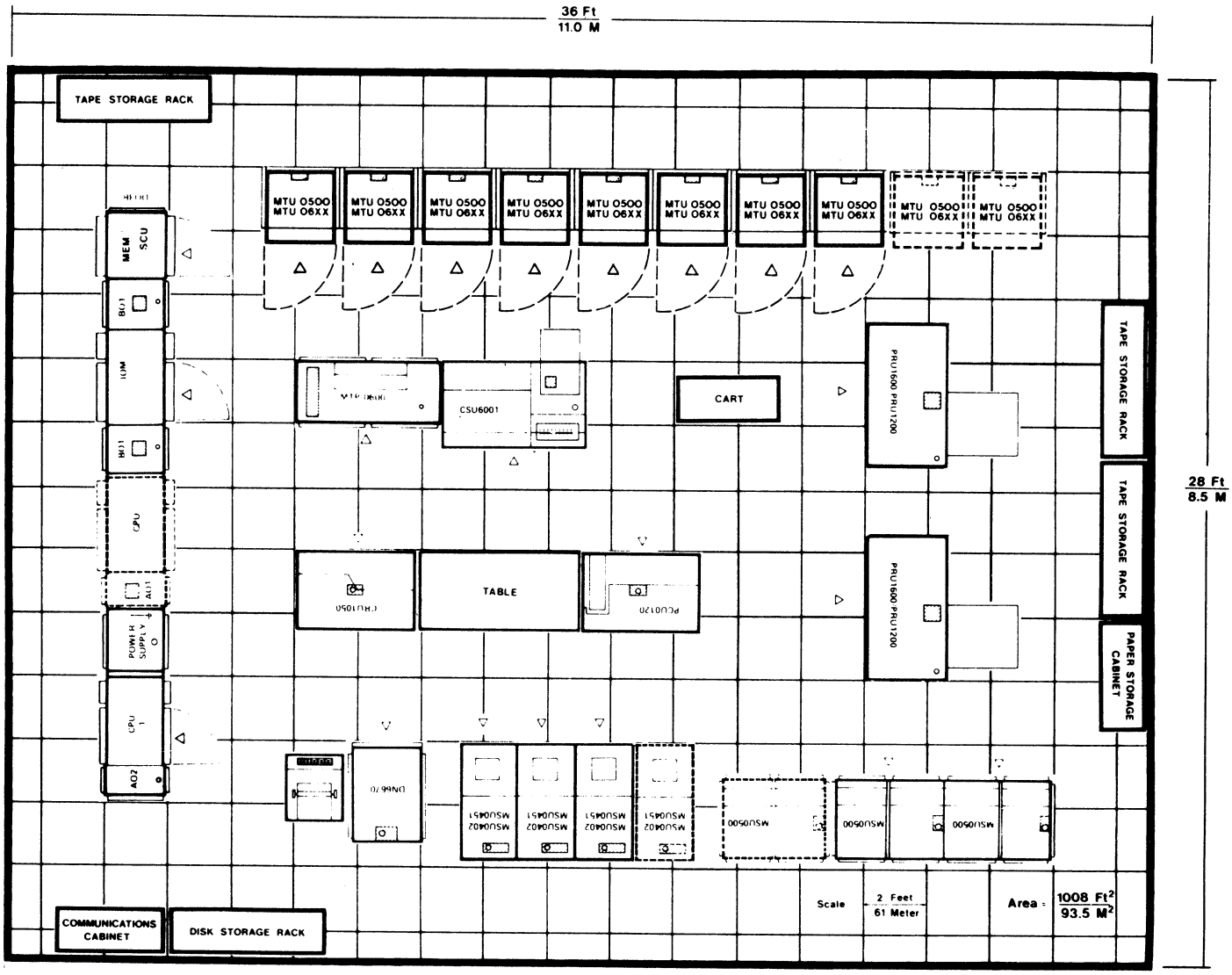
Section 4

Installation Outline Drawings

This section contains individual specification sheets on each major unit in your system. Your Honeywell Sales Representative will provide updated sheets if specifications change, and for additional products as required for system expansion.

In some units, power requirements vary with the quantity and type of option modules. The specification sheets show the maximum value so that future expansion of the option content will not impact facility design. Typical unit electrical values may differ slightly between units due to manufacturing tolerances. They have not been derated for duty cycle. Size and duration of starting current are shown only where significant. Primary distribution should be sized by nameplate rating to meet NFPA 70 electrical code.

When units are installed with an underfloor cooling air supply, the open area between the cable holes in the floor and the cables must be sealed with a removable, noncombustible sealant.



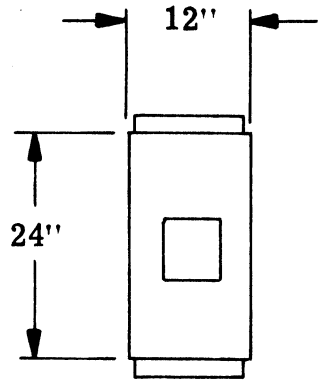
Legend

- Front
- Logic Cable Entrance
- A.C. Power Cable Entrance

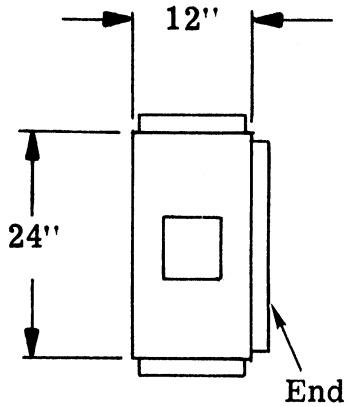
Space Included For :

- Operator/Maintenance Access
- Input/Output Media Storage
- Expansion of Processing Capability

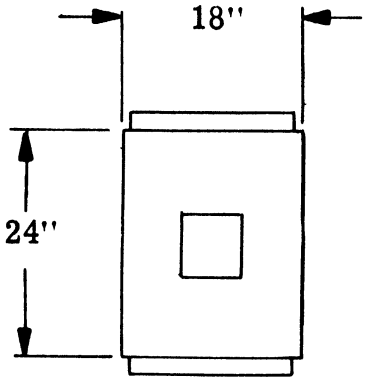
Typical System Layout: 66|DPS-1
68|DPS-1



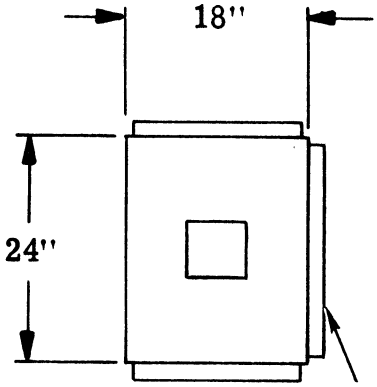
A01



A02



B01



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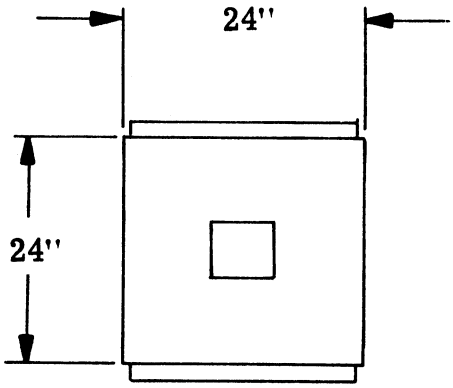

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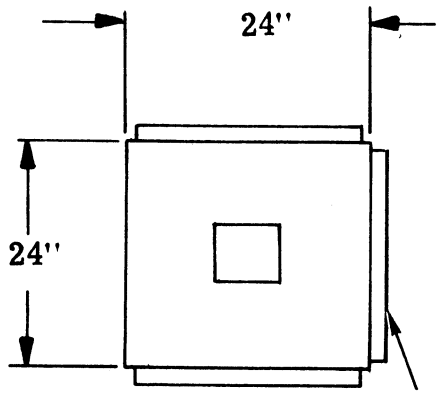
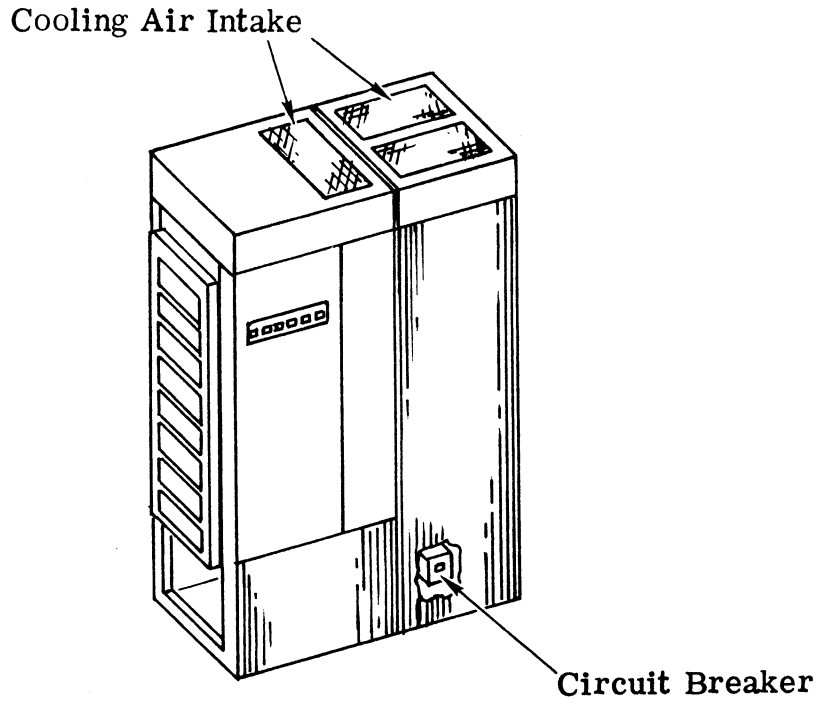


C02

Cable Entry Cutout
Approximately 6" x 6"

JUNCTION FRAMES

CENTRAL PROCESSOR (LEVEL 66)	WCPU66BA/4WCP6600



AC Power Requirements

NAMEPLATE RATING				TYPICAL VALUES			STARTING CURRENT
VOLTS	120/208	AMPS	30	AMPS PER PHASE A 8 B 7 C 8	KVA 2.8	KW 2.5	NA
PHASE	3	CYCLE	60	NOTE 1			

AC Power Connection

AC POWER CORD

INCLUDED	OPTIONAL	NOT AVAIL
☐	☐	☒

AC PLUG: NA

CONNECTOR: NA

RECEPTACLE: NA

RECOMMENDED FACILITY WIRING

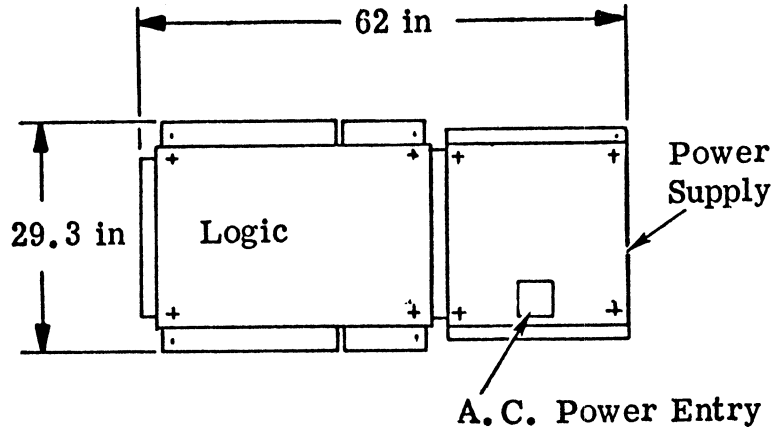
CIRCUIT BREAKER: 30 AMP — 3 POLES

WIRE: 5 QTY (Incl Ground) — NO.: 10 AWG

PHASE SENSITIVE: ☐ YES ☒ NO

HEAT GAIN: 8.5 KBTU

CENTRAL PROCESSOR (LEVEL 66)	WCPU66BA/4WCP6600



GENERAL INFORMATION

Installed Weight	1800 Lbs
Shipping Weight	1850 Lbs
Installed Height	88.6 In
Shipping Height	76.3 In
Full Scale Template	43R177800 SH 5

Required Clearances

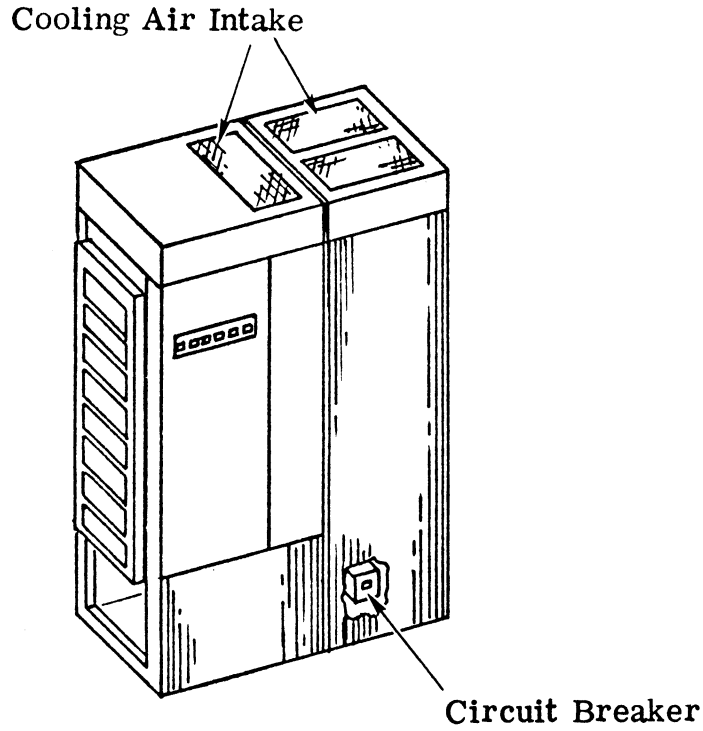
Front	36 In
Back	30 In
Right	-
Left	-

Spacing Restriction Per system layout

NOTES

1. The power supply feeds both the CPU and ICU. These typical values are for CPU only.

CENTRAL PROCESSOR (LEVEL 68)	4WCP6100



AC Power Requirements

NAMEPLATE RATING				TYPICAL VALUES			STARTING CURRENT
VOLTS 120/208	AMPS 24			AMPS PER PHASE	KVA	KW	
PHASE 3	CYCLE 60			A 9.0 B 9.8 C 9.8	3.6	3.3	NA

AC Power Connection

AC POWER CORD

INCLUDED	OPTIONAL	NOT AVAIL
☐	☐	☒

AC PLUG NA

CONNECTOR NA

RECEPTACLE NA

RECOMMENDED FACILITY WIRING

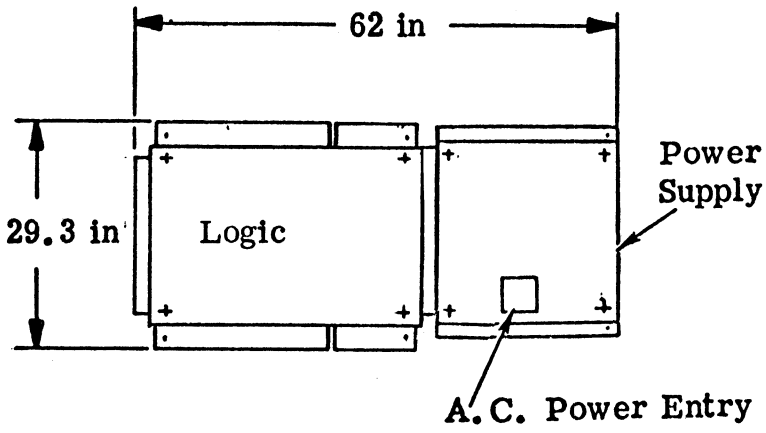
CIRCUIT BREAKER 30 AMP 3 POLES

WIRE 5 QTY (Incl Ground) NO. 10 AWG

PHASE SENSITIVE ☐ YES ☒ NO

HEAT GAIN 11.5 KBTU

CENTRAL PROCESSOR (LEVEL 68)	4WCP6100



GENERAL INFORMATION

NOTES

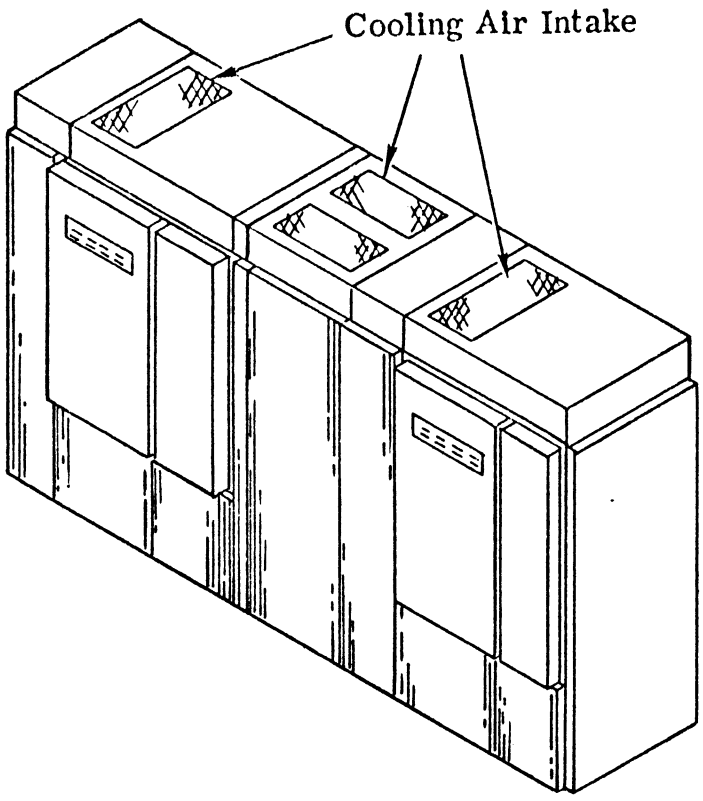
Installed Weight	1800 Lbs
Shipping Weight	1850 Lbs
Installed Height	88.6 In
Shipping Height	76.3 In
Full Scale Template	43R177800 SH 5

Required Clearances

Front	36 In
Back	30 In
Right	-
Left	-

Spacing Restriction Per system layout

CENTRAL PROCESSOR-DUAL (LEVEL 66)	CPS 6650



AC Power Requirements

NAMEPLATE RATING				TYPICAL VALUES			STARTING CURRENT
VOLTS 120/208	AMPS 24			AMPS PER PHASE	KVA	KW	
PHASE 3	CYCLE 60			A 15.4 B 14.3 C 15.9	5.6	5.2	NA

AC Power Connection

AC POWER CORD

INCLUDED	OPTIONAL	NOT AVAIL
☐	☐	☒

AC PLUG NA

CONNECTOR NA

RECEPTACLE NA

RECOMMENDED FACILITY WIRING

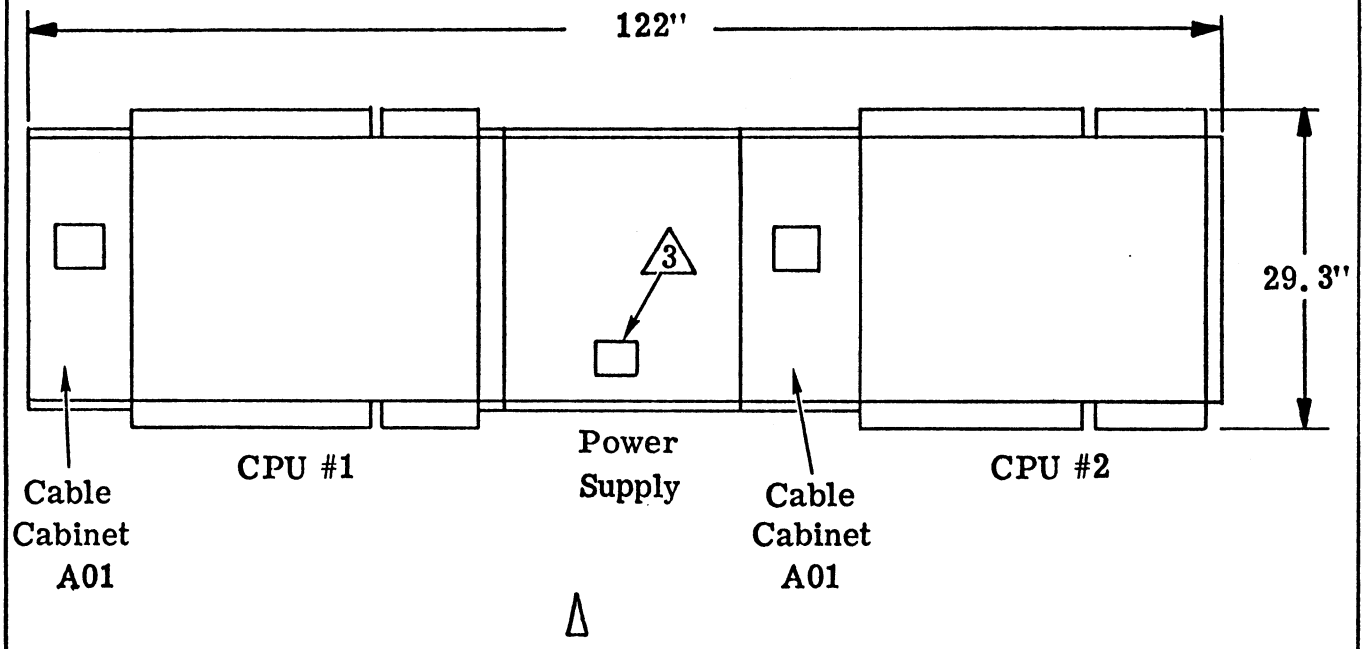
CIRCUIT BREAKER 30 AMP 3 POLES

WIRE 5 QTY (Incl Ground) NO. 10 AWG

PHASE SENSITIVE ☐ YES ☒ NO

HEAT GAIN 17.7 KBTU

CENTRAL PROCESSOR-DUAL (LEVEL 66)	CPS 6650



GENERAL INFORMATION

Installed Weight	2700
Shipping Weight	2800
Installed Height	88.6
Shipping Height	76.3
Full Scale Template	NA

Required Clearances

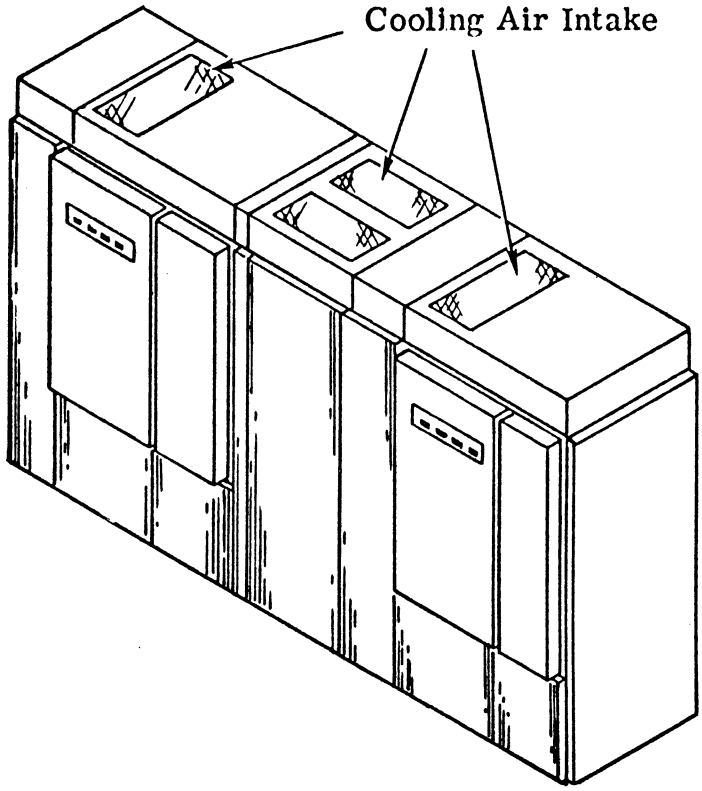
Front	36 in
Back	30 in
Right	
Left	

Spacing Restriction: Per System Layout

NOTES

1. Single power cabinet feeds two central processors.
2. Ships in five separate pieces
   - 2 CPU
   - 1 Power Supply
   - 2 Cable Cabinets
3. Power entry cutout approx 4" x 4"

CENTRAL PROCESSOR-DUAL (LEVEL 68)	CPS 8802



AC Power Requirements

NAMEPLATE RATING				TYPICAL VALUES			STARTING CURRENT
VOLTS	120/208	AMPS	24	AMPS PER PHASE	KVA	KW	
PHASE	3	CYCLE	60	A 17.1 B 18.7 C 16.6	6.4	6.0	NA

AC Power Connection

AC POWER CORD

INCLUDED	OPTIONAL	NOT AVAIL
☐	☐	☒

AC PLUG NA

CONNECTOR NA

RECEPTACLE NA

RECOMMENDED FACILITY WIRING

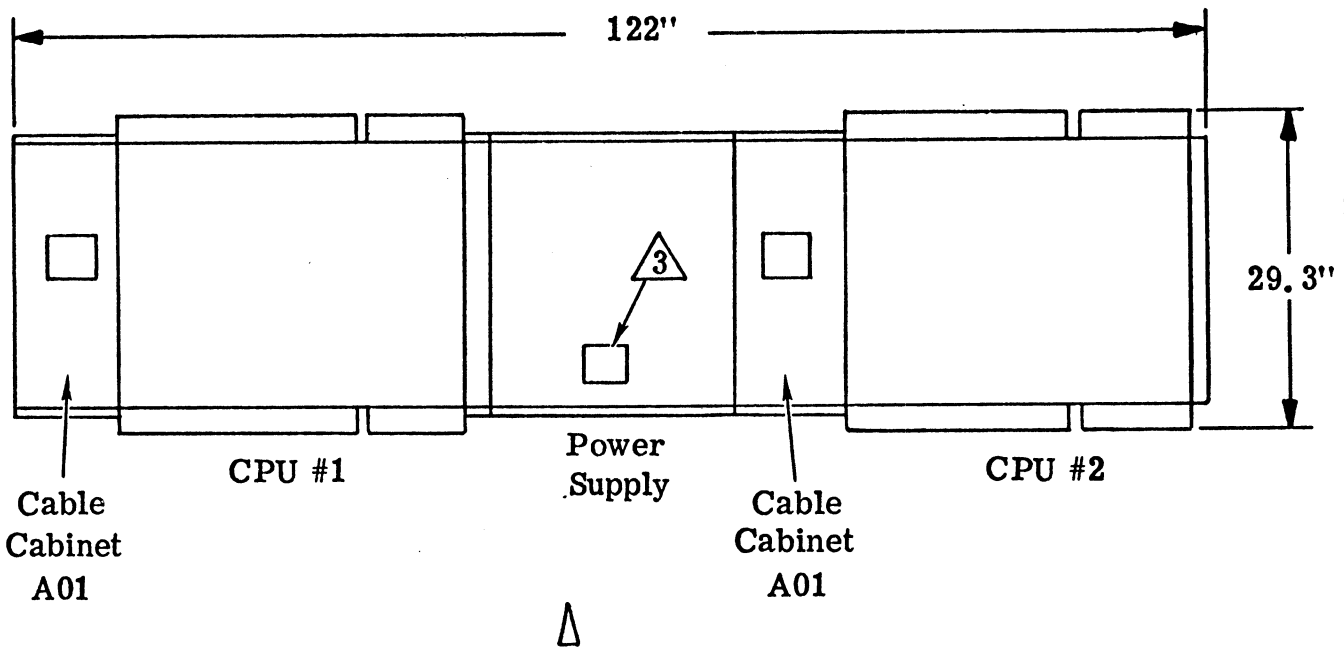
CIRCUIT BREAKER 30 AMP 3 POLES

WIRE 5 QTY (Incl Ground) NO. 10 AWG

PHASE-SENSITIVE ☐ YES ☒ NO

HEAT GAIN 20.5 KBTU

CENTRAL PROCESSOR-DUAL (LEVEL 68)	CPS 8802



PRELIMINARY

GENERAL INFORMATION

Installed Weight	2700 (est)
Shipping Weight	2800 (est)
Installed Height	88.6
Shipping Height	76.3
Full Scale Template	NA

Required Clearances

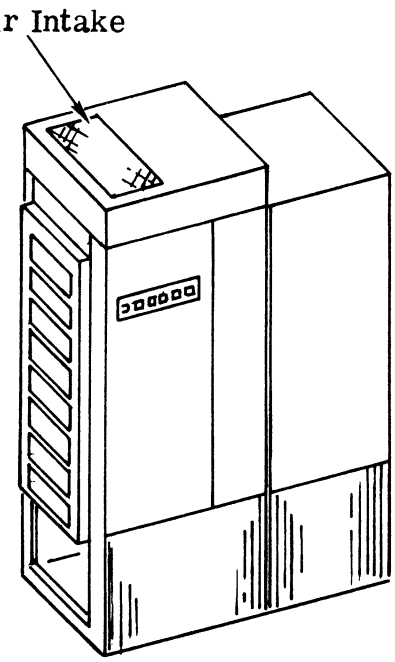
Front	36 in
Back	30 in
Right	
Left	

Spacing Restriction: Per System Layout

NOTES

1. Single power cabinet feeds two central processors.
2. Ships in five separate pieces
   - 2 CPU
   - 1 Power Supply
   - 2 Cable Cabinets
3. Power entry cutout approx 4" x 4"

INTEGRATED CONTROL UNIT	4WCSM601



AC Power Requirements

NAMEPLATE RATING	TYPICAL VALUES			STARTING CURRENT
VOLTS NOTE 1 AMPS	AMPS PER PHASE A 10.3 B 10.9 C 9.5	KVA 3.7	KW 3.3	NA
PHASE CYCLE	NOTE 2			

AC Power Connection

AC POWER CORD

INCLUDED ☐ OPTIONAL ☐ NOT AVAIL ☐

AC PLUG NOTE 1

CONNECTOR

RECEPTACLE

RECOMMENDED FACILITY WIRING

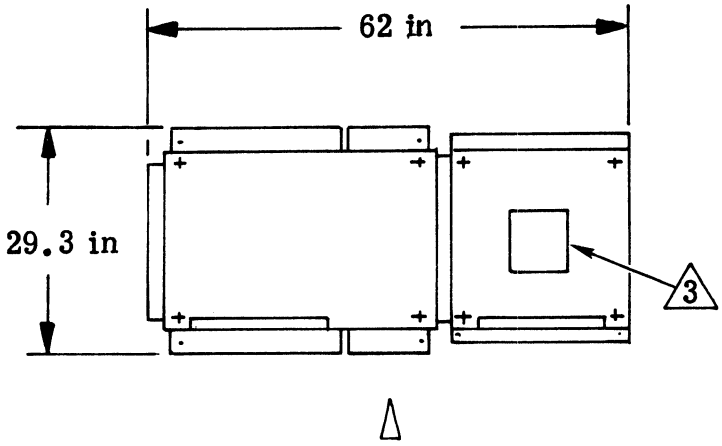
CIRCUIT BREAKER NOTE 1 AMP ____ POLES

WIRE ____ QTY (Incl Ground) NO. ____ AWG

PHASE SENSITIVE ☐ YES ☐ NO

HEAT GAIN 11.3 KBTU

INTEGRATED CONTROL UNIT	4WCSM601



GENERAL INFORMATION

Installed Weight	1425 Lbs
Shipping Weight	1450 Lbs
Installed Height	88.6 In
Shipping Height	76.3 In
Full Scale Template	43R177800 SH 10

Required Clearances

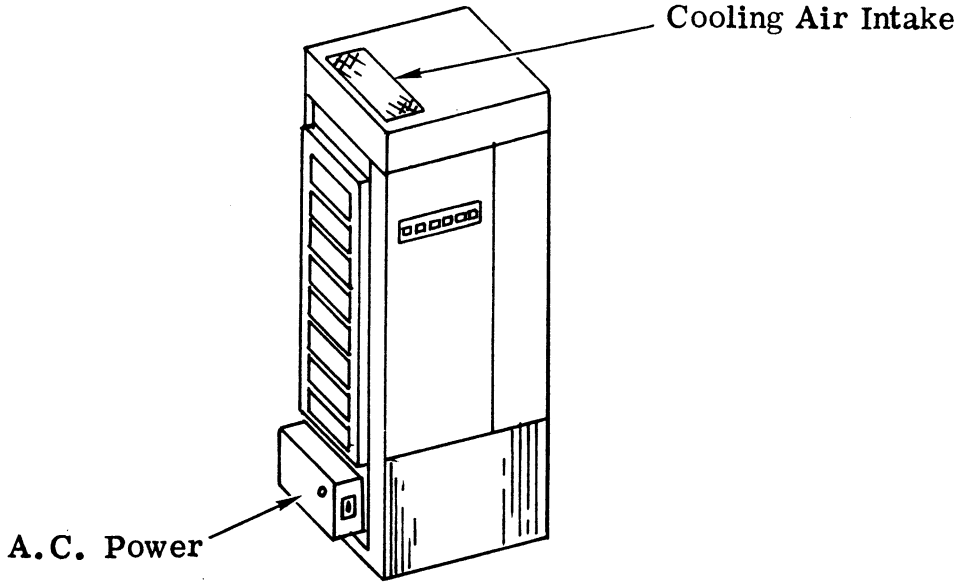
Front	36 In
Back	30 In
Right	
Left	

Spacing Restriction Per system layout

NOTES

1. This unit draws power from additional regulators mounted in the WCPU66BA/4WCP6600 power supply.
2. These values for ICU load only.
3. Cable entry cutout aprox 6 in X 6in.

FREESTANDING IOM	4WDC8634



AC Power Requirements

NAMEPLATE RATING				TYPICAL VALUES			STARTING CURRENT
VOLTS	120/208	AMPS	13	AMPS PER PHASE	KVA	KW	
PHASE	3	CYCLE	60	A 7.5 B 6.5 C 4.0	2.4	2.2	NA

AC Power Connection

AC POWER CORD

INCLUDED ☐ OPTIONAL ☐ NOT AVAIL ☒

AC PLUG NA

CONNECTOR NA

RECEPTACLE NA

RECOMMENDED FACILITY WIRING

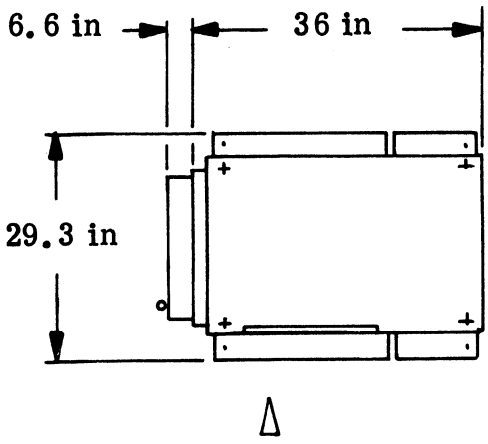
CIRCUIT BREAKER 15 AMP 3 POLES

WIRE 5 QTY (Incl Ground) NO. 14 AWG

PHASE SENSITIVE ☐ YES ☒ NO

HEAT GAIN 7.5 KBTU

FREESTANDING IOM	4WDC8634



GENERAL INFORMATION

Installed Weight	1150 Lbs
Shipping Weight	1200 Lbs
Installed Height	88.6 In
Shipping Height	76.3 In
Full Scale Template	43R177800 SH 3

Required Clearances

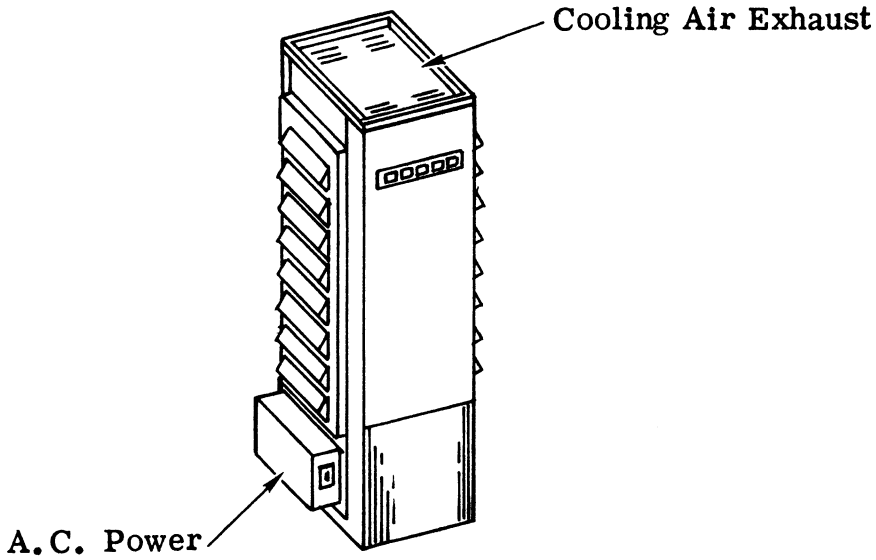
Front	36 In
Back	30 In
Right	-
Left	-

Spacing Restriction Per system layout

NOTES

1. Size and location of cable entry cutouts per system layout.

FREESTANDING SCU	4WMC6000



AC Power Requirements

NAMEPLATE RATING				TYPICAL VALUES				STARTING CURRENT
VOLTS	120/208	AMPS	13	AMPS PER PHASE A 2.1 B 2.0 C 2.4	KVA 0.8	KW 0.7		NA
PHASE	3	CYCLE	60					

AC Power Connection

AC POWER CORD

INCLUDED ☐ OPTIONAL ☐ NOT AVAIL ☒

AC PLUG NA

CONNECTOR NA

RECEPTACLE NA

RECOMMENDED FACILITY WIRING

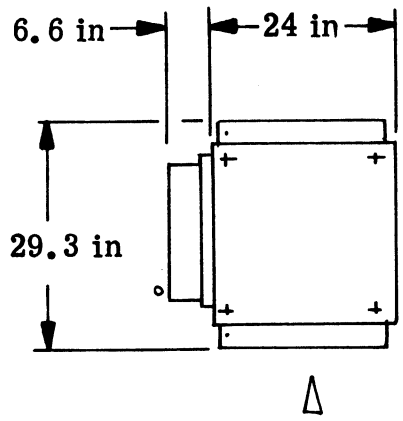
CIRCUIT BREAKER 15 AMP 3 POLES

WIRE 5 QTY (Incl Ground) NO. 14 AWG

PHASE SENSITIVE ☐ YES ☒ NO

HEAT GAIN 2.4 KBTU

FREESTANDING SCU	4WMC6000



GENERAL INFORMATION

NOTES

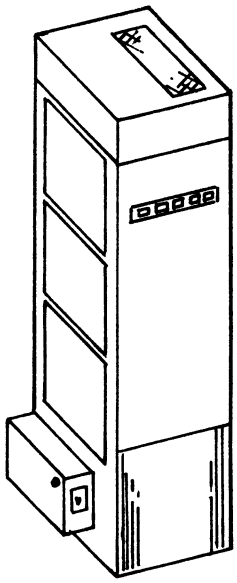
Installed Weight	850 Lbs
Shipping Weight	900 Lbs
Installed Height	76.3 In
Shipping Height	76.3 In
Full Scale Template	43R177800 SH 6

Required Clearances

Front	36 In
Back	30 In
Right	-
Left	-

Spacing Restriction Per system layout

FREESTANDING MEMORY	4WMM8044 - WMMM001A



AC Power Requirements

NAMEPLATE RATING				TYPICAL VALUES			STARTING CURRENT
VOLTS 120/208	AMPS 8			AMPS PER PHASE	KVA	KW	
PHASE 3	CYCLE 60			A 5.0 B 5.4 C 3.3	1.7	1.5	NA

AC Power Connection

AC POWER CORD

INCLUDED	OPTIONAL	NOT AVAIL
☐	☐	☒

AC PLUG NA

CONNECTOR NA

RECEPTACLE NA

RECOMMENDED FACILITY WIRING

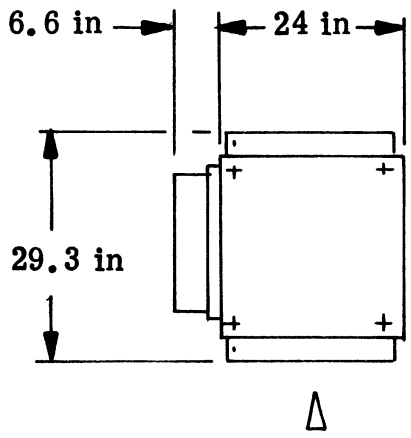
CIRCUIT BREAKER 15 AMP 3 POLES

WIRE 5 QTY (Incl Ground) NO. 14 AWG

PHASE SENSITIVE ☐ YES ☒ NO

HEAT GAIN 5.1 KBTU

FREESTANDING MEMORY	4WMM8044 - WMMM001A



GENERAL INFORMATION

Installed Weight	850 Lb
Shipping Weight	900 Lb
Installed Height	88.6 In
Shipping Height	76.3 In
Full Scale Template	43R177800 SH 8

Required Clearances

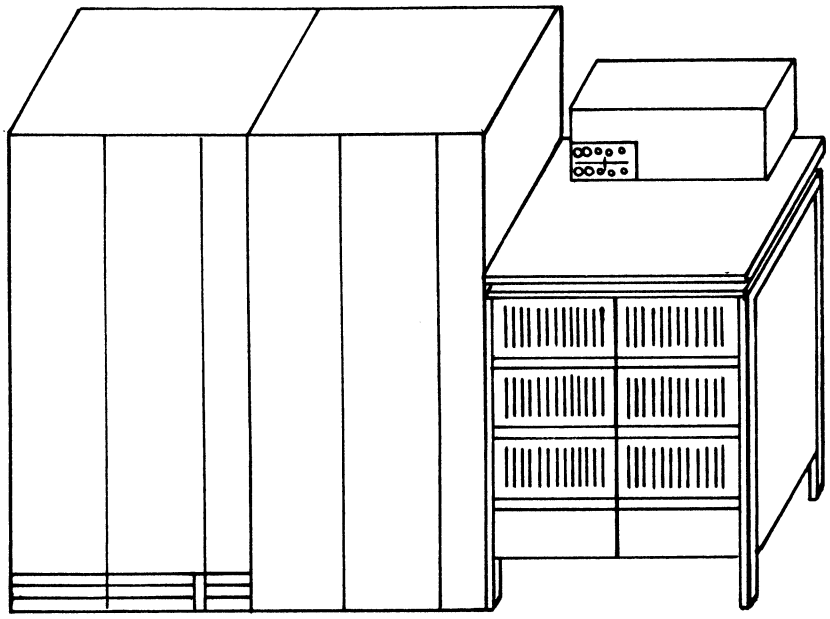
Front	36 In
Back	30 In
Right	-
Left	-

Spacing Restriction Per system layout

NOTES

1. WMMM001A may include an integrated SCU.
2. Electrical data for: 512K, 16 pin, 4K MOS with SCU.

COMPATIBILITY MODE OPTION	CPF6001



AC Power Requirements

NAMEPLATE RATING		TYPICAL VALUES			STARTING CURRENT
VOLTS 120/208 AMPS 20		AMPS PER PHASE	KVA	KW	
PHASE 3 CYCLE 60		A 14 B 19 C 18	6.1	5.8	NA

AC Power Connection

AC POWER CORD

INCLUDED	OPTIONAL	NOT AVAIL
[X]	[ ]	[ ]

AC PLUG Hubbell 25415

CONNECTOR Hubbell 25414

RECEPTACLE Hubbell 25403

RECOMMENDED FACILITY WIRING

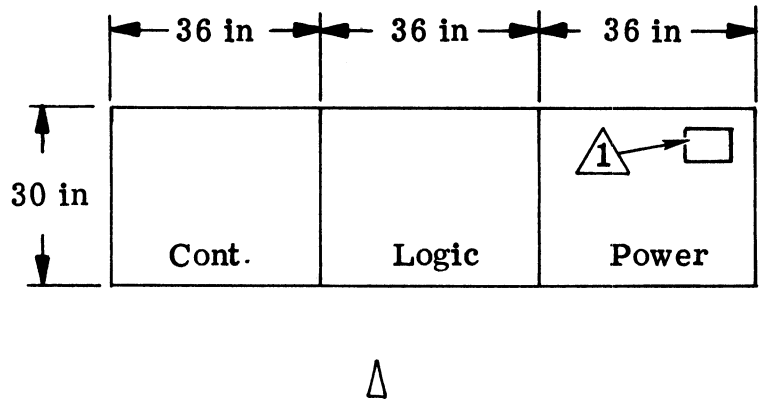
CIRCUIT BREAKER 20 AMP 3 POLES

WIRE 5 QTY (Incl Ground) NO. 10 AWG

PHASE SENSITIVE [ ] YES [X] NO

HEAT GAIN 20.0 KBTU

COMPATIBILITY MODE OPTION	CPF6001



GENERAL INFORMATION

Installed Weight	2860	Lbs
Shipping Weight	2860	Lbs
Installed Height	68	In
Shipping Height	68	In
Full Scale Template	NA	

Required Clearances

Front	30	In
Back	30	In
Right		
Left		

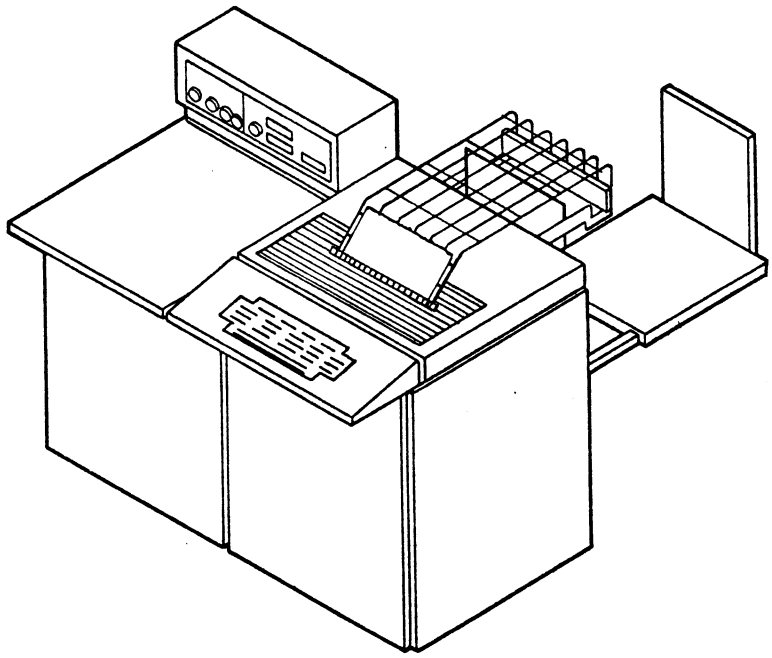
Spacing Restriction: Cable length to SCU

Cable Length: 50 Ft

NOTES

1. Cable and power entry cutout aproximately 6 in X 6 in.
2. Ships in three sections.

SYSTEM CONSOLE	CSU6001



AC Power Requirements

NAMEPLATE RATING				TYPICAL VALUES			STARTING CURRENT
VOLTS 120/208	AMPS 10			AMPS PER PHASE	KVA	KW	
PHASE 3	CYCLE 60			A 0.5 B 1.0 C 1.2	0.3	0.2	NA

AC Power Connection

AC POWER CORD

INCLUDED	OPTIONAL	NOT AVAIL
☐	☐	☒

AC PLUG NA

CONNECTOR NA

RECEPTACLE NA

RECOMMENDED FACILITY WIRING

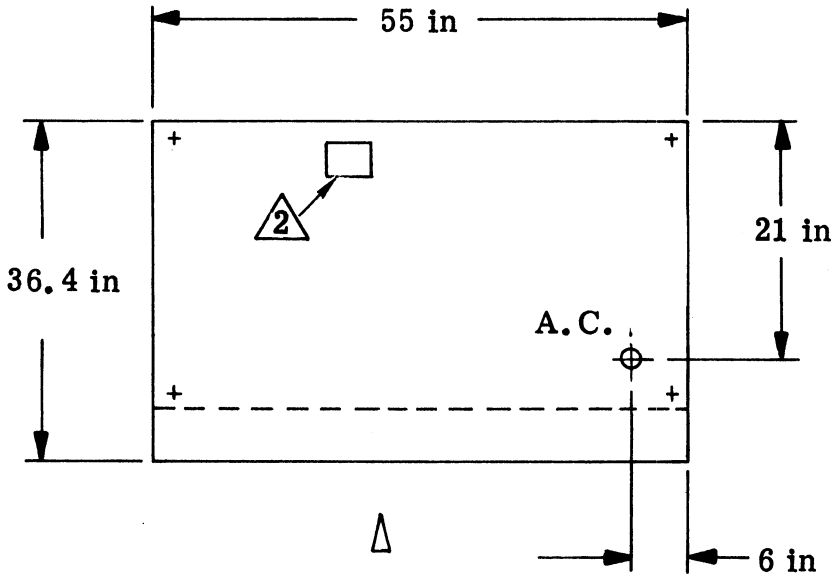
CIRCUIT BREAKER 15 AMP 3 POLES

WIRE 5 QTY (Incl Ground) NO. 14 AWG

PHASE SENSITIVE ☐ YES ☒ NO

HEAT GAIN 0.9 KBTU

SYSTEM CONSOLE	CSU6001



GENERAL INFORMATION

Installed Weight	520 Lbs
Shipping Weight	550 Lbs
Installed Height	49 In
Shipping Height	49 In
Full Scale Template	43R177800 SH 3

Required Clearances

Front	36 In
Back	36 In
Right	-
Left	-

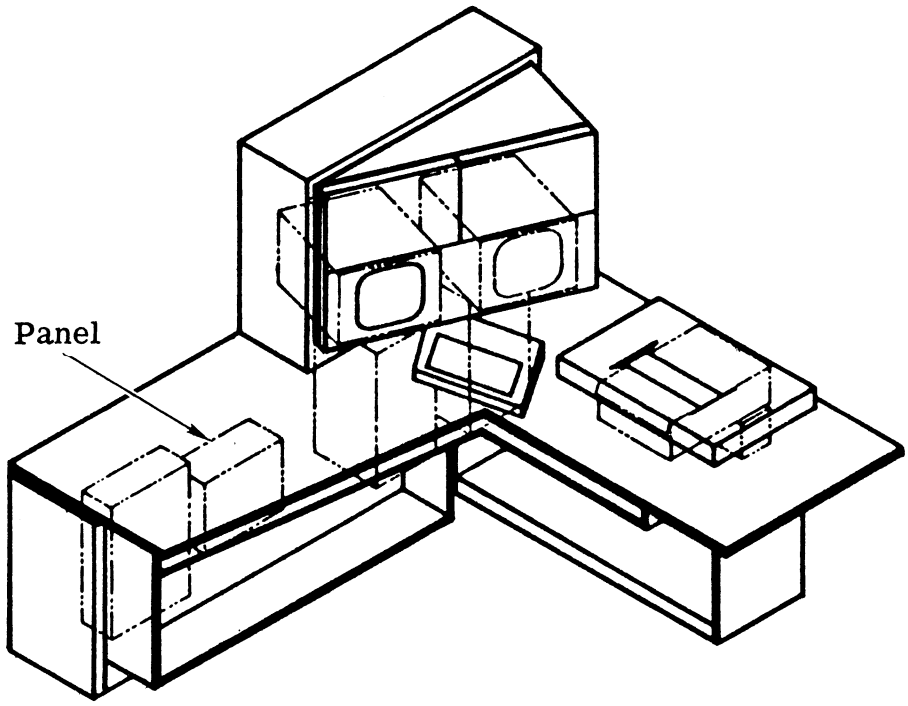
Spacing Restriction Cable length to IOM

Cable Length 140 ft. max.

NOTES

1. Top may be removed for shipping to reduce width to 30 inches.
2. Cable entry cutout aprox. 4" X 4".

SYSTEM CONTROL CENTER	CSU6002



AC Power Requirements

NAMEPLATE RATING				TYPICAL VALUES			STARTING CURRENT
VOLTS 120/208	AMPS 10			AMPS PER PHASE	KVA	KW	
PHASE 3	CYCLE 60			A 2.6 B 2.6 C 2.6	0.9	0.8	NA

AC Power Connection

AC POWER CORD

INCLUDED	OPTIONAL	NOT AVAIL
☐	☐	☒

AC PLUG NA

CONNECTOR NA

RECEPTACLE NA

RECOMMENDED FACILITY WIRING

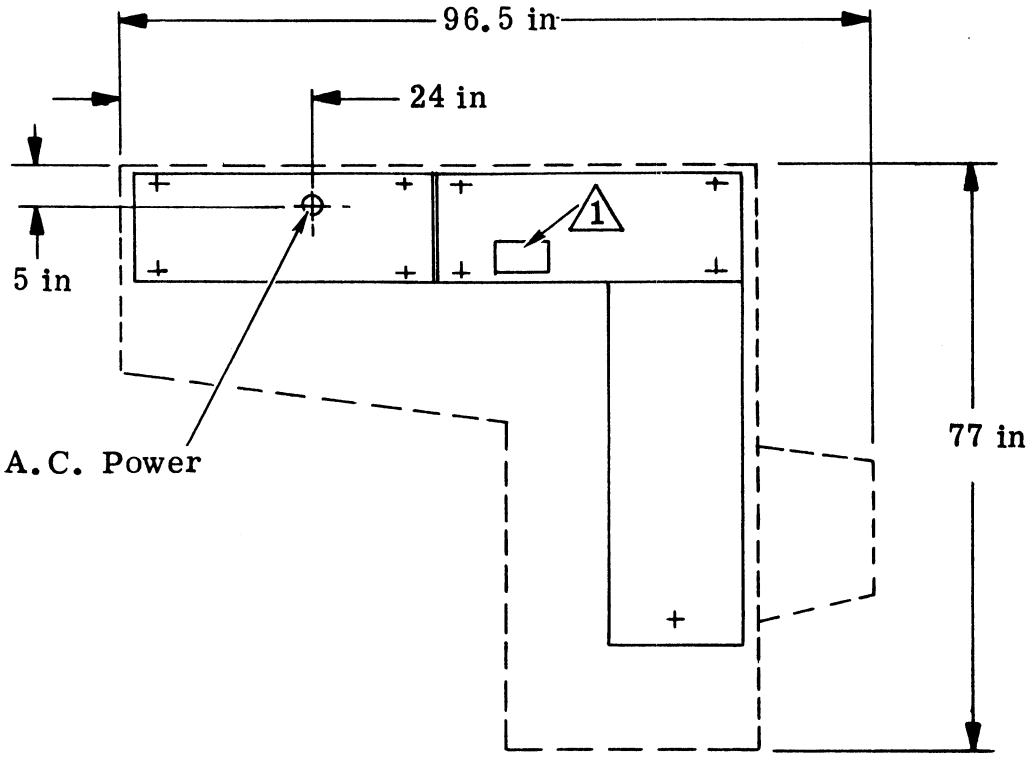
CIRCUIT BREAKER 15 AMP 3 POLES

WIRE 5 QTY (Incl Ground) NO. 14 AWG

PHASE SENSITIVE ☐ YES ☒ NO

HEAT GAIN 2.8 KBTU

SYSTEM CONTROL CENTER	CSU6002



GENERAL INFORMATION

Installed Weight	850 Lbs
Shipping Weight	1000 Lbs
Installed Height	60 In
Shipping Height	60 In
Full Scale Template	43R177800 SH 30A & 30B

Required Clearances

Front	36 In
Back	30 In
Right	30 In
Left	-

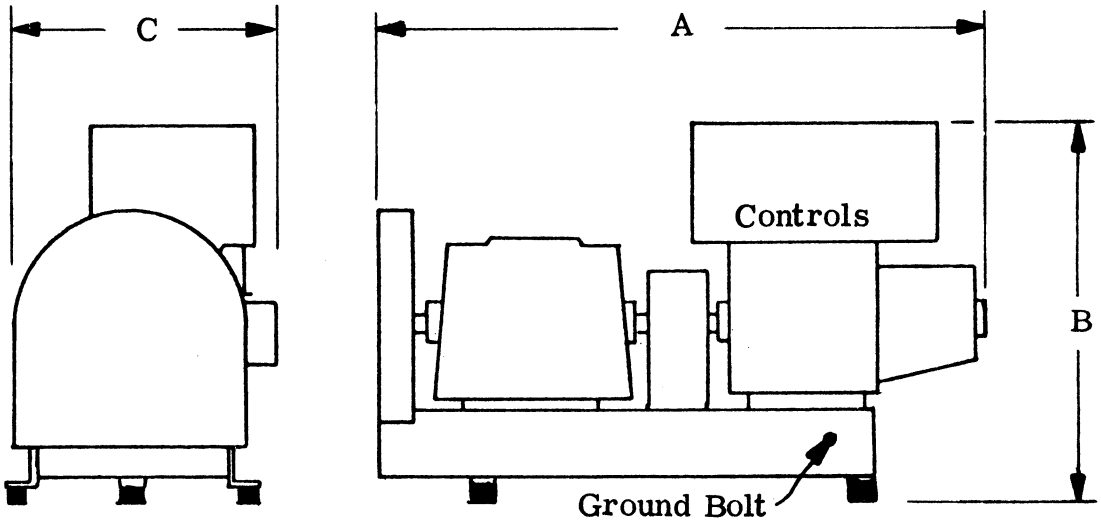
Spacing Restriction Cable length to IOM

Cable Length 140 foot max.

NOTES

1. Cable entry cutout aprox. 4" x 6".
2. Unit ships in three sections.

MOTOR GENERATOR	MG8030A, MG8030B, MG8031B



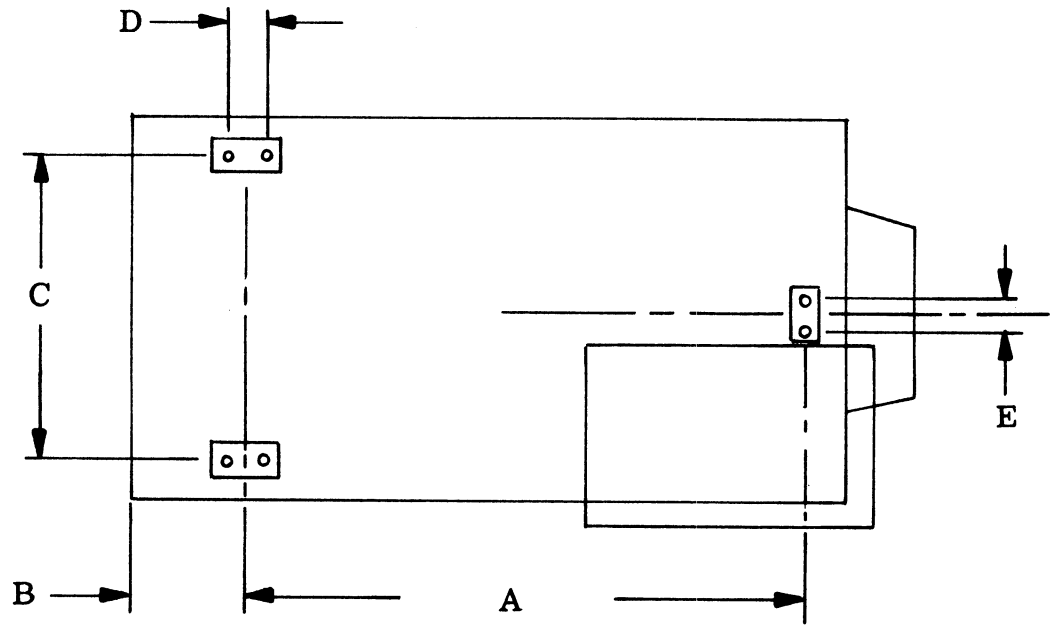
Model	KW	A	B	C	Weight
8030	25	67"	45"	29"	1650 lbs
8031	50	72"	55"	33"	2750 lbs

Vendor G. E.

AC Power Requirements

Motor – Generator Set	Load Amps/Phase		Motor		KVA	KW	KBtu/hr.
	Run	Start	HP	Code			
4WMG8030		4 sec.	40	G, H			26
Output	87				31.3	25	
Input – 208 Volts	108	570			38.8	32.1	
Input – 440 Volts	51	300			38.8	32.1	
Input – 480 Volts	51	330			42.3	32.6	
4WMG8031		4 sec.	78	E, G			43.7
Output	174				62.5	50	
Input – 208 Volts	212	950		(G)	76.0	62.8	
Input – 240 Volts	196	1140		(G)	81.4	62.8	
Input – 440 Volts	100	500		(G)	76.0	62.8	
Input – 480 Volts	98	570		(G)	81.4	62.8	

MOTOR GENERATOR	MG8030A, MG8030B, MG8031B



Mounting Pad Dimensions

Model	KW	A	B	C	D	E
8030	25	39"	13"	22"	4.12"	5.12"
8031	50	44.5"	12.75"	27"	4.12"	5.12"

Hole Dia. .437"

GENERAL INFORMATION

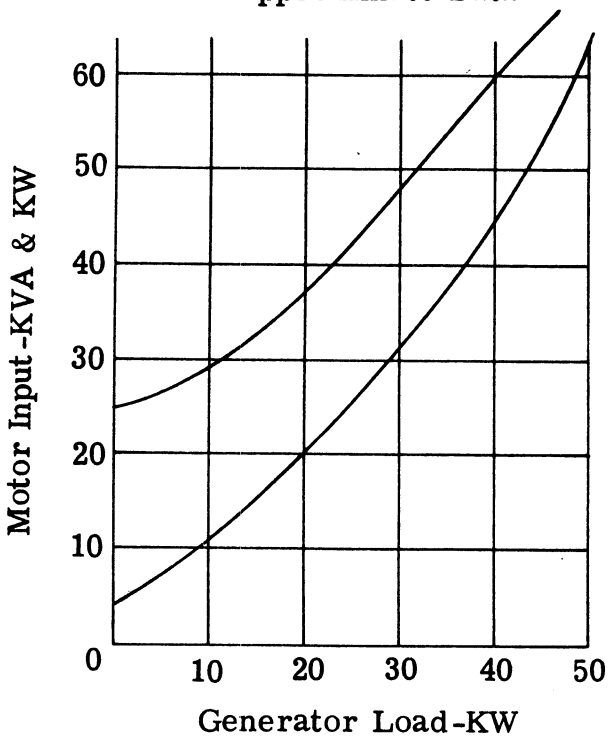
Installed Weight See Table Sh. 1
Shipping Weight +100 lbs
Installed Height See Table Sh. 1
Shipping Height +6 in
Full Scale Template NA

Required Clearances
Front 42 in
Back 36 in
Right 36 in
Left 36 in

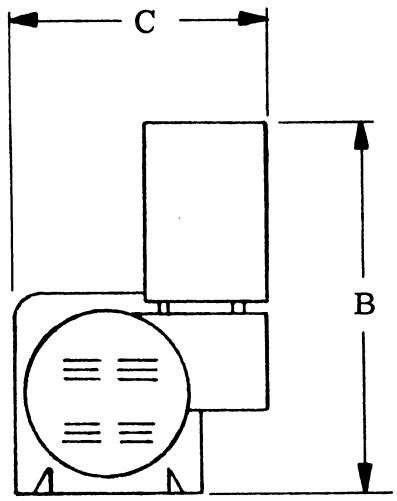
Spacing Restriction Voltage Drop in Output Wiring

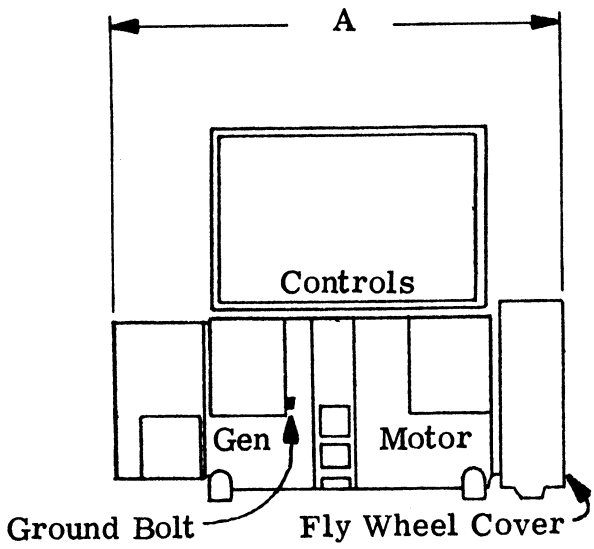
NOTES

Approximate Data



MOTOR GENERATOR	MG8030C, MC8031C





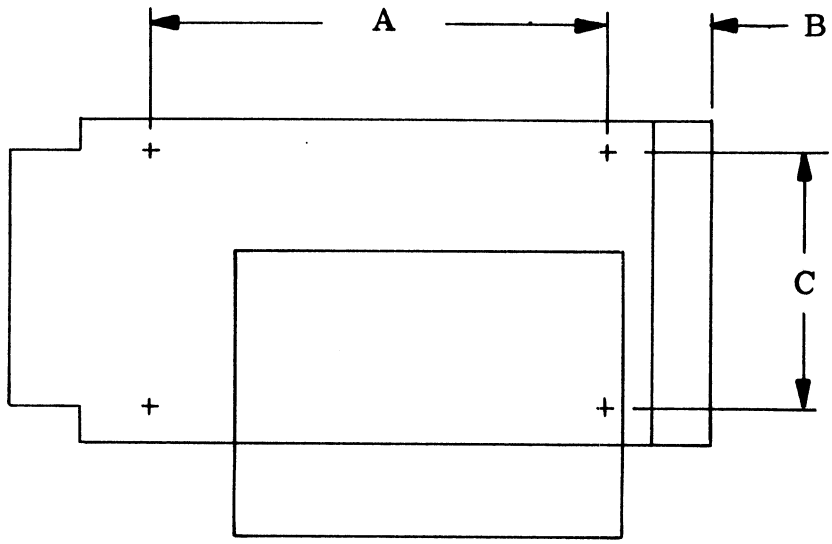
Model	KW	A	B	C	Weight
8030	25	55"	50"	26"	1800 lbs
8031	50	60"	49"	38"	2700 lbs

Vendor KATO

AC Power Requirements

Motor – Generator Set	Load Amps/Phase		Motor		KVA	KW	KBtu/hr.
	Run	Start	HP	Code			
4WMG8030		4 sec.	40	G, H			30
Output	87				31.3	25	
Input – 208 Volts	108	595			38.8	32.1	
Input – 440 Volts	51	315			38.8	32.1	
Input – 480 Volts	51	345			42.3	32.6	
4WMG8031		4 sec.	78	E, G			46
Output	174				62.5	50	
Input – 208 Volts	212	1180		(G)	76.0	62.8	
Input – 240 Volts	196	1360		(G)	81.4	62.8	
Input – 440 Volts	100	625		(G)	76.0	62.8	
Input – 480 Volts	98	662		(G)	81.4	62.8	

MOTOR GENERATOR	MG8030C, MG8031C



Mounting Pad Dimensions

Model	KW	A	B	C
8030	25	31"	11"	19.5"
8031	50	33.75"	12"	19.5"

Use 1/2" Bolts

GENERAL INFORMATION

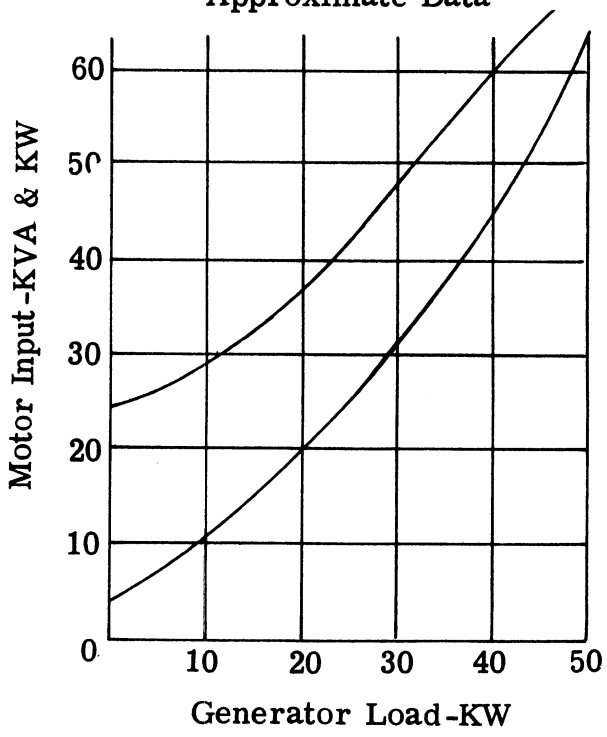
Installed Weight See Table Sh. 1
Shipping Weight +100 lbs
Installed Height See Table Sh. 1
Shipping Height +6 in
Full Scale Template NA

Required Clearances
Front 42 in
Back 36 in
Right 36 in
Left 36 in

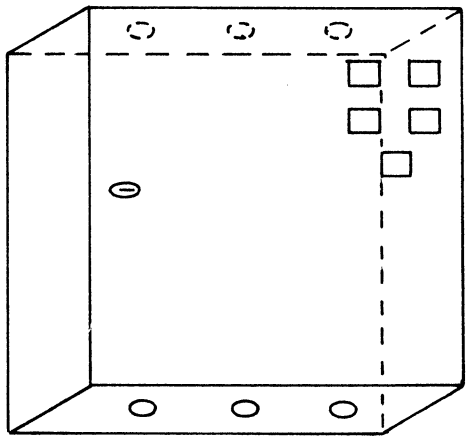
Spacing Restriction Voltage Drop in Output Wiring

NOTES

Approximate Data



MOTOR GENERATOR CONTROL UNIT	4WMGC655AA



AC Power Requirements

NAMEPLATE RATING		TYPICAL VALUES			STARTING CURRENT
VOLTS 120 AMPS 1		AMPS PER PHASE A 1.0 B - C -	KVA 0.2	KW 0.2	NA
PHASE 1 CYCLE 50/60					

AC Power Connection

AC POWER CORD

INCLUDED	OPTIONAL	NOT AVAIL
☐	☐	☒

AC PLUG NA

CONNECTOR NA

RECEPTACLE NA

HEAT GAIN 0.4 KBTU

RECOMMENDED FACILITY WIRING

PRIMARY POWER

CIRCUIT BREAKER 5 AMP 1 POLES

WIRE 3 QTY (Incl Ground) NO. 14 AWG

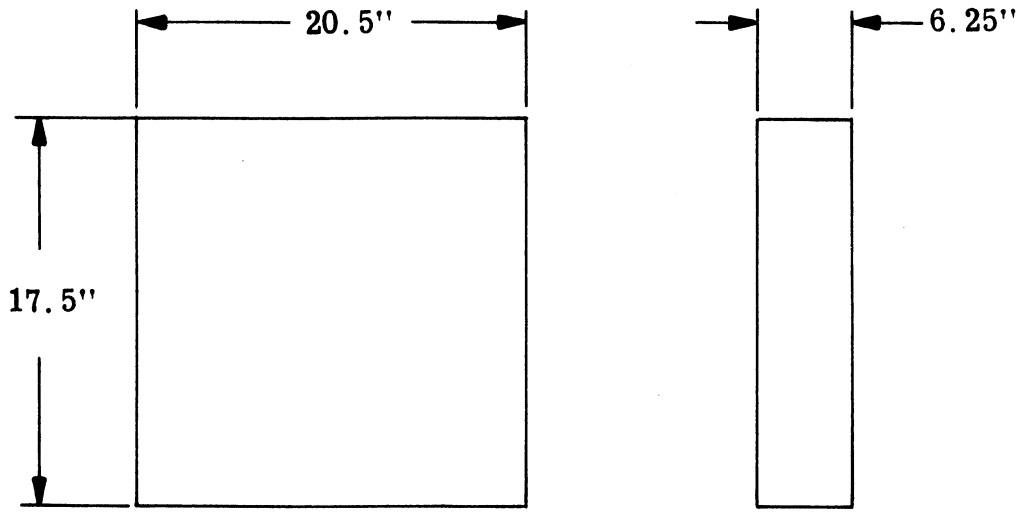
PHASE SENSITIVE ☐ YES ☒ NO

MG POWER

Circuit breaker 5 Amp 1 Poles

Wire 2 Qty No. 14 AWG

MOTOR GENERATOR CONTROL UNIT	4WMGC655AA



GENERAL INFORMATION

Installed Weight	50 Lbs
Shipping Weight	50 Lbs
Installed Height	
Shipping Height	
Full Scale Template	

Required Clearances

Front
Back
Right
Left

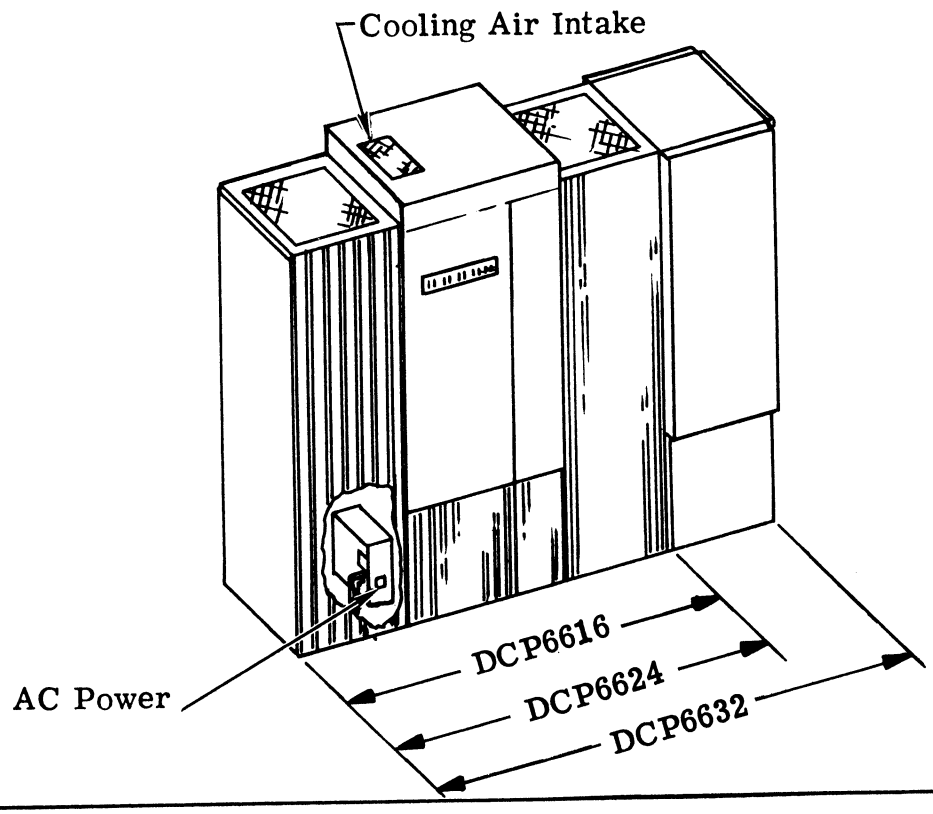
} Wall mounted

Spacing Restriction Maximum of 200 feet from motor generator using #14 AWG wire for control circuits.

NOTES

1. Conduit from utility power to be grounded to case. Conduit from MG power to be isolated from case.

DATANET	DCP6616/6624/6632



AC Power Requirements

NAMEPLATE RATING		TYPICAL VALUES			STARTING CURRENT
VOLTS 120/208 AMPS 11		AMPS PER PHASE	KVA	KW	
PHASE 3 CYCLE 60		A 7.8 B 6.8 C 6.3	2.4	2.1	-

AC Power Connection

AC POWER CORD

INCLUDED	OPTIONAL	NOT AVAIL
☐	☐	☒

AC PLUG -

CONNECTOR -

RECEPTACLE -

RECOMMENDED FACILITY WIRING

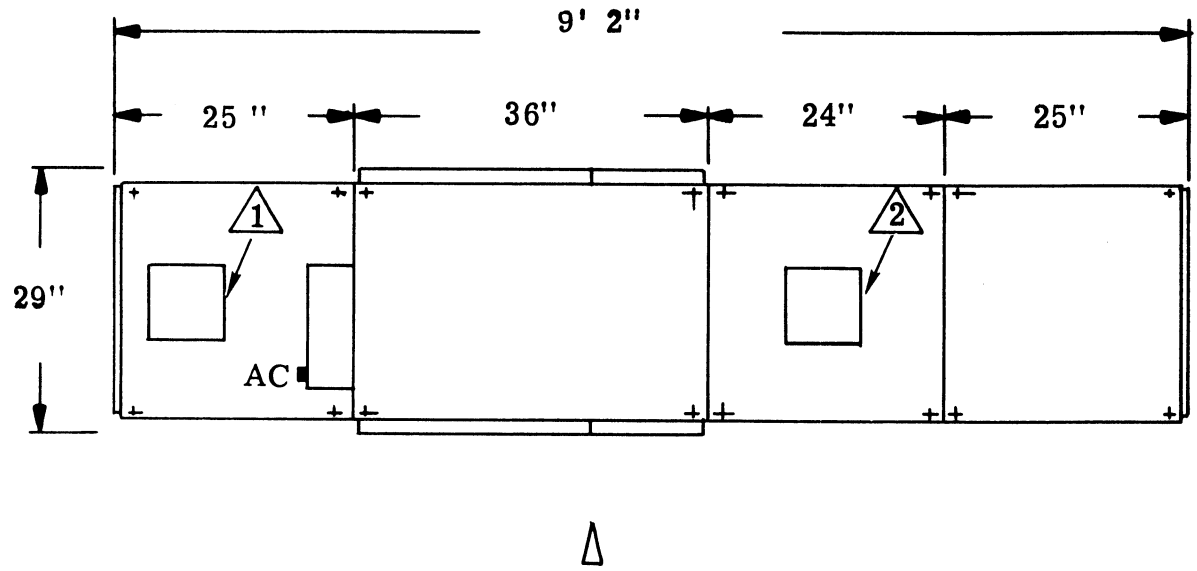
CIRCUIT BREAKER 15 AMP 3 POLES

WIRE 5 QTY (Incl Ground) NO. 14 AWG

PHASE SENSITIVE ☐ YES ☒ NO

Requires regulated power from motor generator.

HEAT GAIN 7.2 KBTU



GENERAL INFORMATION

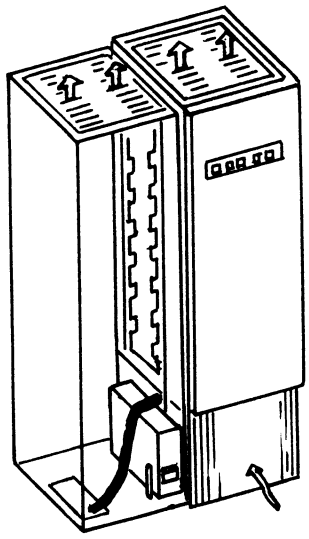
Installed Weight	2000 Lbs
Shipping Weight	2100 Lbs
Installed Height	88.6 In
Shipping Height	76.3 In
Full Scale Template	
Required Clearances	
Front	36 In
Back	30 In
Right	---
Left	---
Spacing Restriction	Cable length to IOM
Cable Length	70 feet max.

NOTES :

1. Cable and power entry cutout - aprox 6" X 6".
2. Logic cable entry cutout aprox 6" X 6".
3. Processor ships in four sections

COMMUNICATIONS BASE	DCU6201/6202

Cooling Air
Exhaust



AC Power Requirements

NAMEPLATE RATING				TYPICAL VALUES			STARTING CURRENT
VOLTS 120/208	AMPS 10			AMPS PER PHASE	KVA	KW	
PHASE 3	CYCLE 60			A 1.3 B 2.1 C 0.8	0.5	0.4	-

AC Power Connection

AC POWER CORD

INCLUDED	OPTIONAL	NOT AVAIL
☐	☐	☒

AC PLUG -

CONNECTOR -

RECEPTACLE

RECOMMENDED FACILITY WIRING

CIRCUIT BREAKER 15 AMP 3 POLES

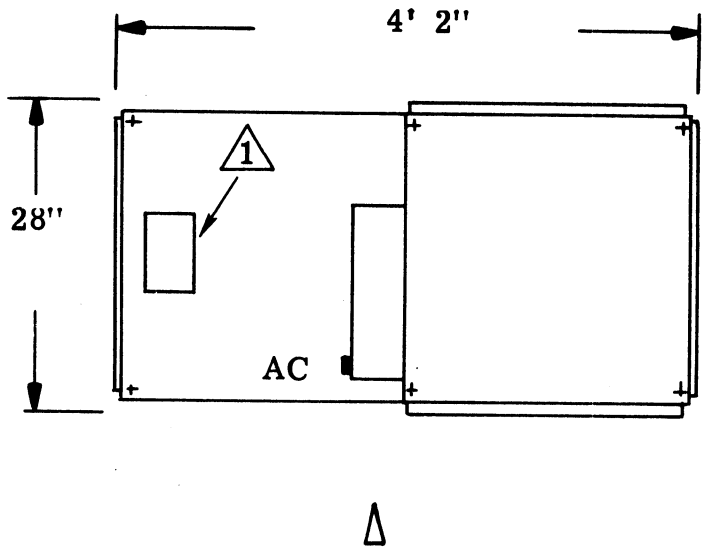
WIRE 5 QTY (Incl Ground) NO. 14 AWG

PHASE SENSITIVE ☐ YES ☒ NO

Requires regulated power from motor generator.

HEAT GAIN 1.4 KBTU

COMMUNICATIONS BASE	DCU6201/6202



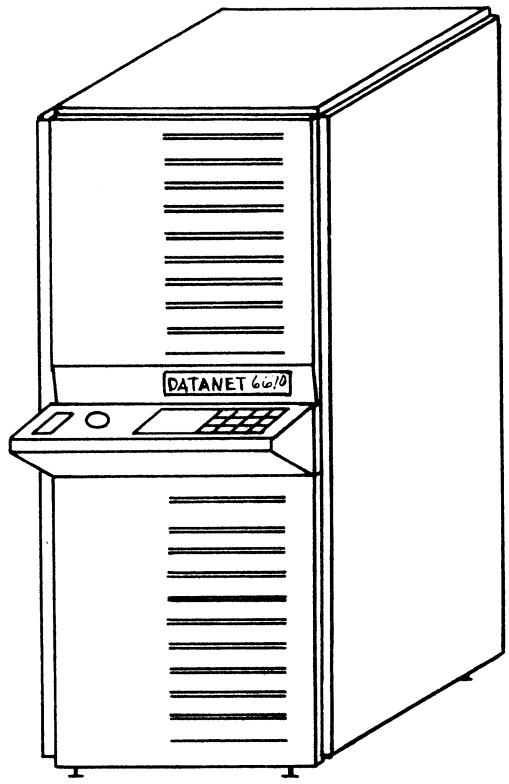
GENERAL INFORMATION

Installed Weight	850 Lbs
Shipping Weight	900 Lbs
Installed Height	76.3 In
Shipping Height	76.3 In
Full Scale Template	43R177800-23
Required Clearances	
Front	36 In
Back	30 In
Right	--
Left	--
Spacing Restriction	Cable length to Datanet.
Cable Length	40 feet max.

NOTES:

1. Cable and power entry cutout aprox 4" X 6".
2. Unit ships in two sections

DATANET	DATANET 6670



AC Power Requirements

NAMEPLATE RATING		TYPICAL VALUES			STARTING CURRENT
VOLTS 120/208 AMPS 24		AMPS PER PHASE	KVA	KW	
PHASE 3 CYCLE 60		A 20 B 20 C 20	7.8	4.9	NA

Note 1

AC Power Connection

AC POWER CORD

INCLUDED	OPTIONAL	NOT AVAIL
X		

AC PLUG Hubbell 25415

CONNECTOR Hubbell 25414

RECEPTACLE Hubbell 25403

RECOMMENDED FACILITY WIRING

CIRCUIT BREAKER 30 AMP 3 POLES

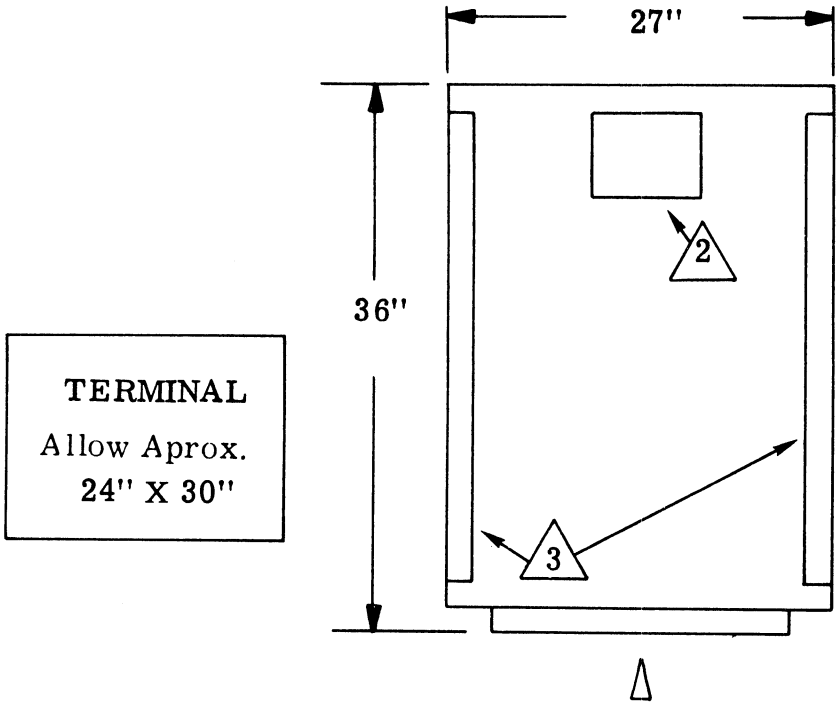
WIRE 5 QTY (Incl Ground) NO. 10 AWG

PHASE SENSITIVE ☐ YES ☒ NO

NOTE: Power also required for specific type of terminal ordered. Typical - 120v, 1 Ph., 15 Amp service.

HEAT GAIN 16.6 KBTU
See Note 1

DATANET	DATANET 6670



GENERAL INFORMATION

Installed Weight	900 Lbs
Shipping Weight	900 Lbs
Installed Height	62 In
Shipping Height	61 In
Full Scale Template	NA

Required Clearances

Front	36 In
Back	30 In
Right, Left	To permit cable installation

Spacing Restriction

Cable length to IOM.

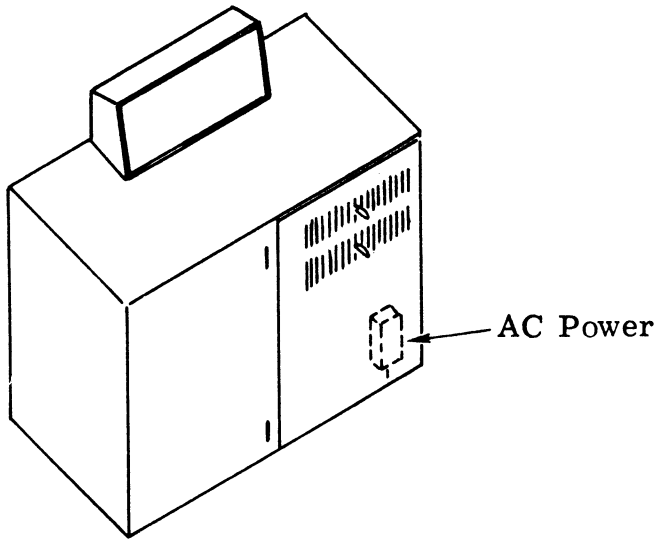
Cable Length

70 feet max.

NOTES

1. Variable with option content from 5 to 20 Amps per phase. 5-16 KBTU
2. Power & logic cable entry cutout aprox. 6" X 8".
3. Logic cable entry cutout aprox. 3" X 25".

PERIPHERAL PROCESSOR	MSP060X/MTP060X/URP060X



AC Power Requirements

NAMEPLATE RATING				TYPICAL VALUES			STARTING CURRENT
VOLTS 120/208	AMPS 10			AMPS PER PHASE A 5.2 B 4.0 C 5.4	KVA 1.8	KW 1.6	NA
PHASE 3	CYCLE 60						

AC Power Connection

AC POWER CORD

INCLUDED	OPTIONAL	NOT AVAIL
☐	☐	☒

AC PLUG -

CONNECTOR -

RECEPTACLE -

RECOMMENDED FACILITY WIRING

CIRCUIT BREAKER 15 AMP 3 POLES

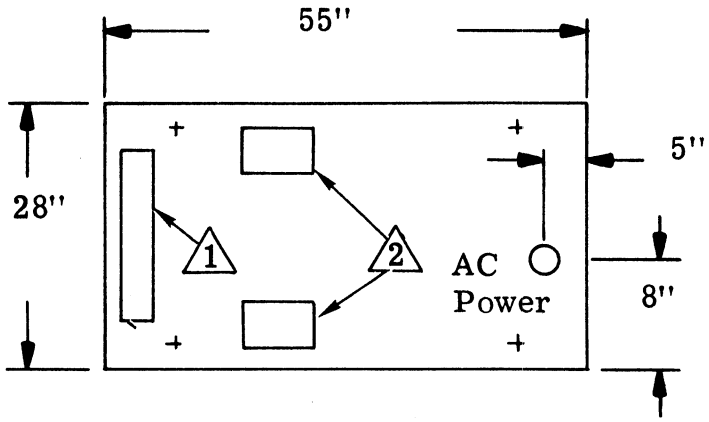
WIRE 5 QTY (Incl Ground) NO. 14 AWG

PHASE SENSITIVE ☐ YES ☒ NO

Requires regulated power from Motor Generator

HEAT GAIN 5.5 KBTU

PERIPHERAL PROCESSOR	MSP060X/MTP060X/URP060X



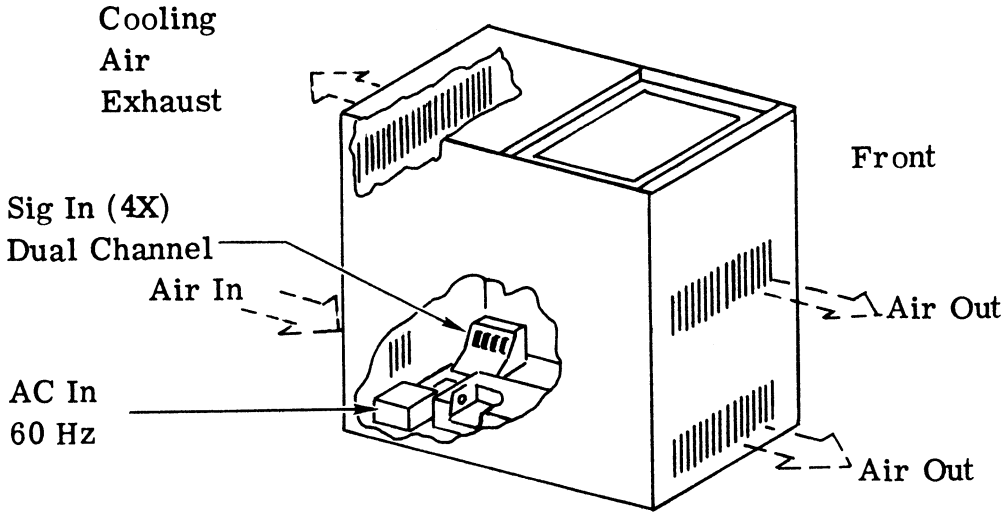
GENERAL INFORMATION

Installed Weight	700 Lbs
Shipping Weight	725 Lbs
Installed Height	50.5 In
Shipping Height	50.5 In
Full Scale Template	43R177800-28
Required Clearances	
Front	36 In
Back	30 In
Right	---
Left	---
Spacing Restriction	Cable length to TOM
Cable Length	70 feet max.

NOTES :

1. Cable entry cutout aprox. 6" X 20".
2. Cable entry cutouts for dual channel disk option aprox 6" X 8".

MASS STORAGE UNIT	MSU0310



AC Power Requirements

NAMEPLATE RATING				TYPICAL VALUES			STARTING CURRENT
VOLTS 208	AMPS 4.5			AMPS PER PHASE	KVA	KW	NA
PHASE 3	CYCLE 60			A 4.0 B 3.0 C 3.0	1.2	1.0	

AC Power Connection

AC POWER CORD

INCLUDED	OPTIONAL	NOT AVAIL	
☐	☒	☐	
AC PLUG	Hubbell		25415
CONNECTOR	Hubbell		25414
RECEPTACLE	Hubbell		25403

RECOMMENDED FACILITY WIRING

CIRCUIT BREAKER 15 AMP 3 POLES

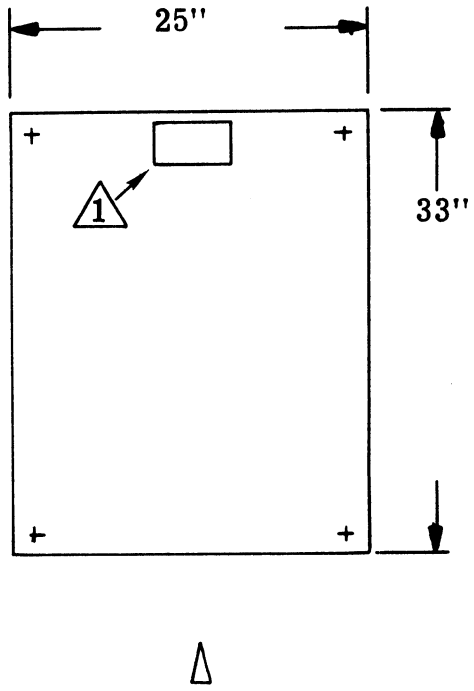
WIRE 4 QTY (Incl Ground) NO. 14 AWG

PHASE SENSITIVE ☐ YES ☒ NO

See Note 2

HEAT GAIN 3.5 KBTU

MASS STORAGE UNIT	MSU0310



GENERAL INFORMATION

Installed Weight	425 Lbs
Shipping Weight	500 Lbs
Installed Height	39.5 In
Shipping Height	39.5 In
Full Scale Template	43R177800-38

Required Clearances

Front	36 In
Back	30 In
Right	
Left	

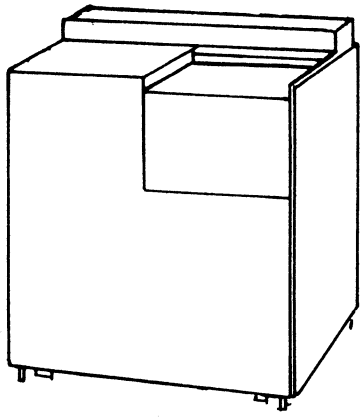
Spacing Restriction: Limited by cable length to Mass Store Processor.

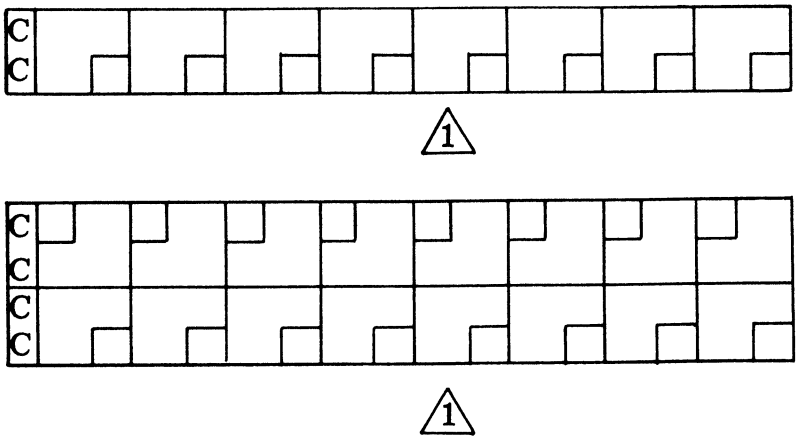
Cable Length: 40 feet max
25 feet min

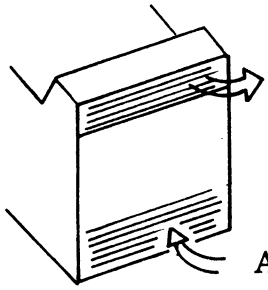
NOTES

1. Cable and power entry cutout - aprox. 4" X 6".
2. Power Connection 3 phases and ground. Neutral not used.

MASS STORAGE UNIT	MSU0400







Permissible Configurations

1 Cable Cabinet may be at either end or in the middle

AC Power Requirements

NAMEPLATE RATING				TYPICAL VALUES				STARTING CURRENT
VOLTS 208	AMPS 10			AMPS PER PHASE		KVA	KW	40 Amp - 10 Seconds Maximum
PHASE 3	CYCLE 60			A 5.0	B 7.0 C 5.0	2.0	1.6	

AC Power Connection

AC POWER CORD

INCLUDED ☐ OPTIONAL ☐ NOT AVAIL ☒

AC PLUG Power Hardwired to cable cabinet

CONNECTOR

RECEPTACLE

RECOMMENDED FACILITY WIRING

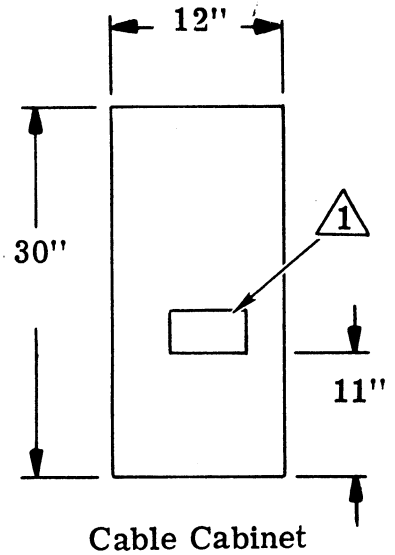
CIRCUIT BREAKER 50 AMP 3 POLES

WIRE 5 QTY (Incl Ground) NO. 6 AWG

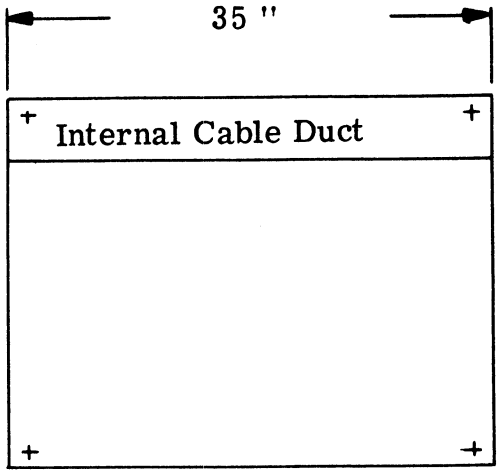
PHASE SENSITIVE ☒ YES ☐ NO

HEAT GAIN 5.6 KBTU

MASS STORAGE UNIT	MSU0400



Cable Cabinet



MSU

GENERAL INFORMATION

Installed Weight	850 Lbs
Shipping Weight	850 Lbs
Installed Height	42.3 In
Shipping Height	42.3 In
Full Scale Template	43R177800-40

Required Clearances	
Front	36 In
Back	2 In
Right	
Left	

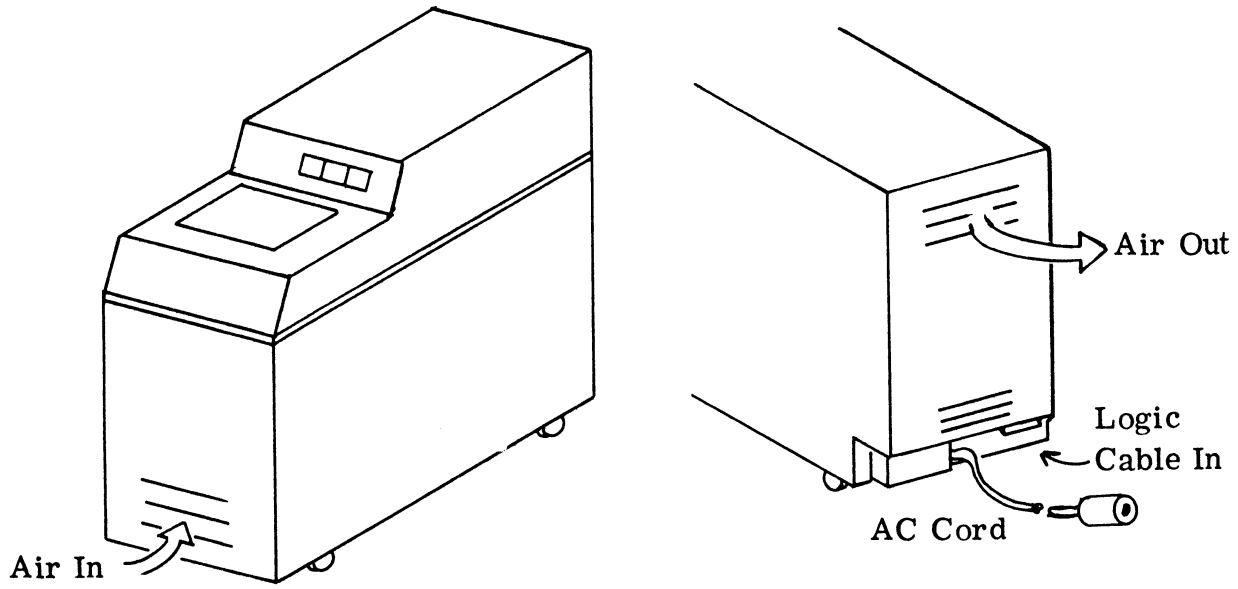
Spacing Restriction Cable length to MSP

Cable Length 50 ft if 4 drives from CC to end of string
40 ft if 8 drives from CC to end of string.

NOTES

1. Cable and power entry cutout - approx 6" X 9".
2. All access for maintenance is from the front.
3. Eight MSUs maximum per cable cabinet. Cable cabinet may be at either end or in center. Each cable cabinet requires separate power service.

MASS STORAGE UNIT	MSU0402/0451



AC Power Requirements

NAMEPLATE RATING

VOLTS 208 AMPS 8

PHASE 2 CYCLE 60

TYPICAL VALUES

AMPS PER PHASE	KVA	KW
A 7.5 B 7.5 C -	1.6	1.3

STARTING CURRENT

40 Amp - 10 Sec Max

AC Power Connection

AC POWER CORD

INCLUDED	OPTIONAL	NOT AVAIL
[X]	[ ]	[ ]

AC PLUG Hubbell 25415

CONNECTOR Hubbell 25414

RECEPTACLE Hubbell 25403

RECOMMENDED FACILITY WIRING

CIRCUIT BREAKER 20 AMP 2 POLES

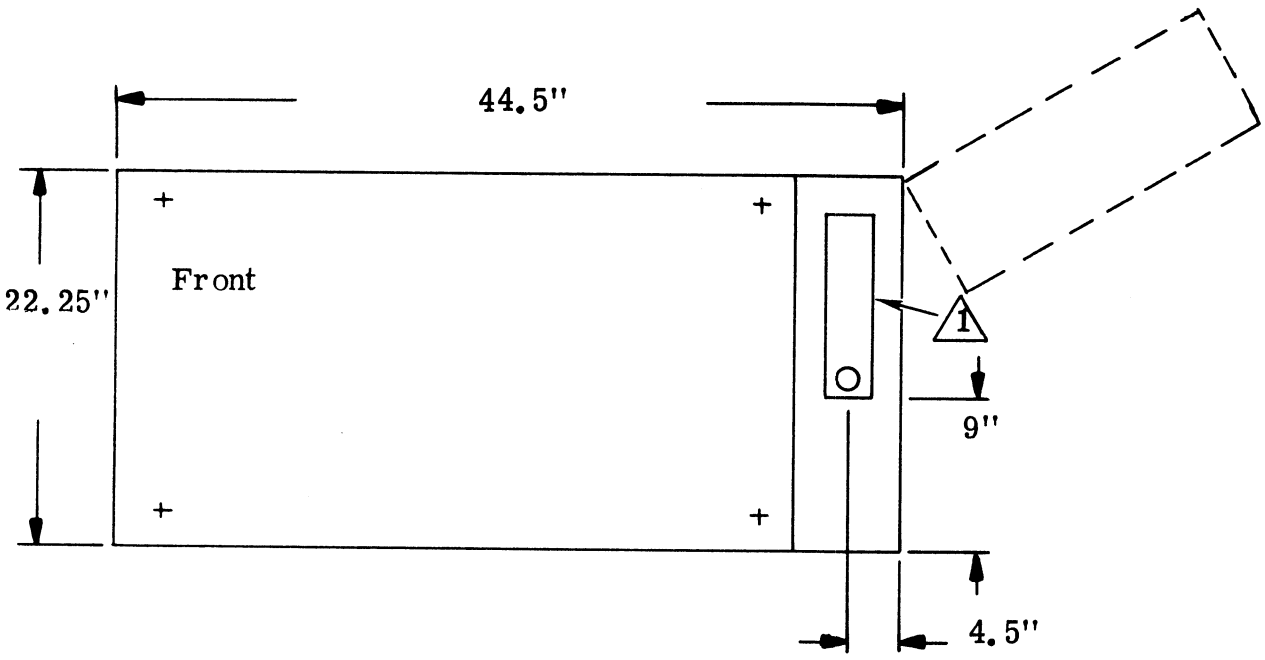
WIRE 3 QTY (Incl Ground) NO. 12 AWG

PHASE SENSITIVE [ ] YES [X] NO

- See Note 2 -

HEAT GAIN 4.5 KBTU

MASS STORAGE UNIT	MSU0402/0451



GENERAL INFORMATION

Installed Weight	700 Lbs
Shipping Weight	750 Lbs
Installed Height	40 In
Shipping Height	40 In
Full Scale Template	43R177800-39

Required Clearances

Front	36 In
Back	30 In
Right	-
Left	-

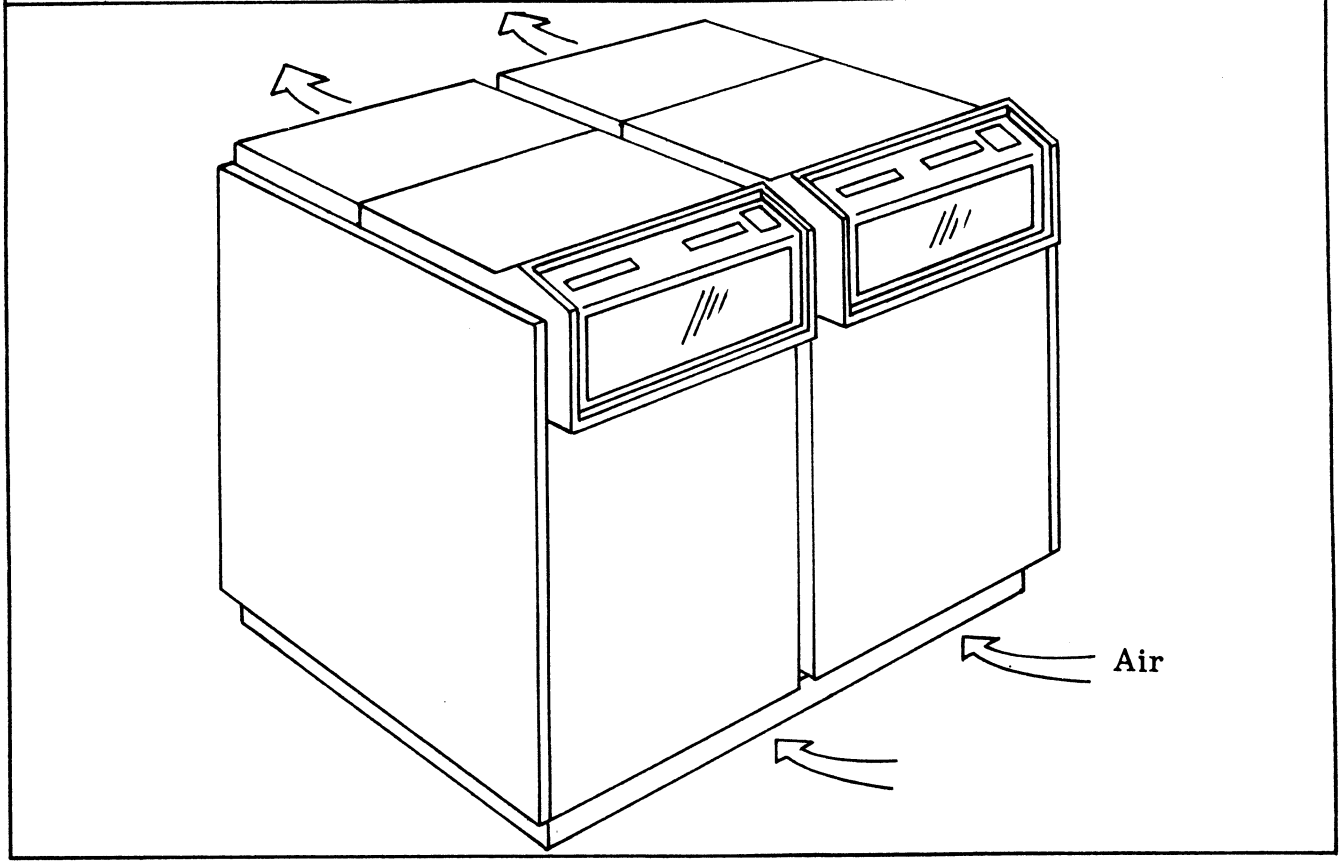
Spacing Restriction: Cable length to Mass Storage Processor

Cable Length: 70 feet max.

NOTES

1. Cable and power entry cutout approx 4" X 10".
2. Phases must be rotated so that the load of all installed drives is balanced across the three phases. Neutral wire not required.

MASS STORAGE UNIT	MSU0500



AC Power Requirements

NAMEPLATE RATING

VOLTS 120/208 AMPS 7.5

PHASE 3 CYCLE 60

TYPICAL VALUES

AMPS PER PHASE	KVA	KW
A 7.5 B 7.5 C 7.5	2.7	2.1

STARTING CURRENT

17 Amp - 3 sec

AC Power Connection

AC POWER CORD

	INCLUDED	OPTIONAL	NOT AVAIL
	[X]	[ ]	[ ]
AC PLUG	Hubbell	25415	
CONNECTOR	Hubbell	25414	
RECEPTACLE	Hubbell	25403	

RECOMMENDED FACILITY WIRING

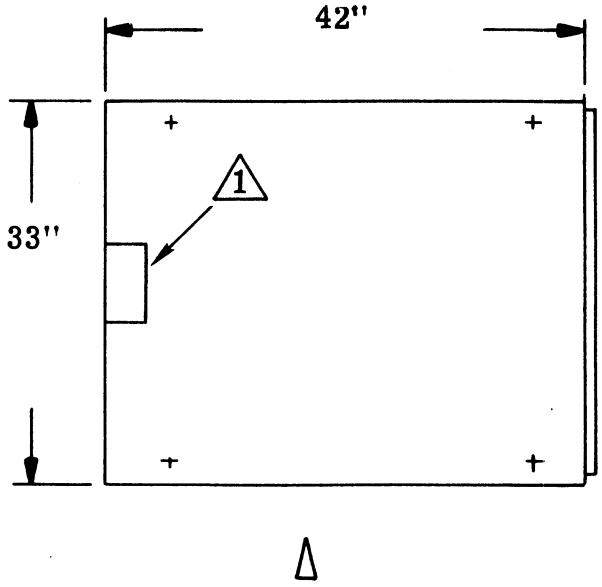
CIRCUIT BREAKER 15 AMP 3 POLES

WIRE 5 QTY (Incl Ground) NO. 14 AWG

PHASE SENSITIVE [ ] YES [X] NO

HEAT GAIN 7.3 KBTU

MASS STORAGE UNIT	MSU0500



GENERAL INFORMATION

Installed Weight	1080 Lbs
Shipping Weight	1100 Lbs
Installed Height	44 In
Shipping Height	44 In
Full Scale Template	-
Required Clearances	
Front	36 In
Back	30 In
Right	-
Left	-

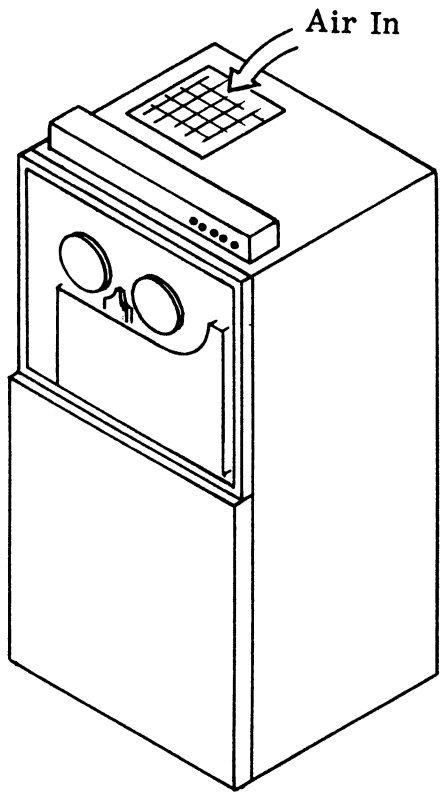
Spacing Restriction: Cable length to Mass Storage Processor

Cable Length: 70 feet max.

NOTES

1. Cable and power entry cutout approx 4" X 6".

MAG TAPE UNIT	MTU0410



AC Power Requirements

NAMEPLATE RATING		TYPICAL VALUES			STARTING CURRENT
VOLTS 120 AMPS 17		AMPS PER PHASE	KVA	KW	-
PHASE 1 CYCLE 60		A 17 B - C -	2.1	1.7	

AC Power Connection

AC POWER CORD

	INCLUDED	OPTIONAL	NOT AVAIL
	[X]	[ ]	[ ]
AC PLUG	Hubbell	2611	
CONNECTOR	Hubbell	2613	
RECEPTACLE	Hubbell	2610	

RECOMMENDED FACILITY WIRING

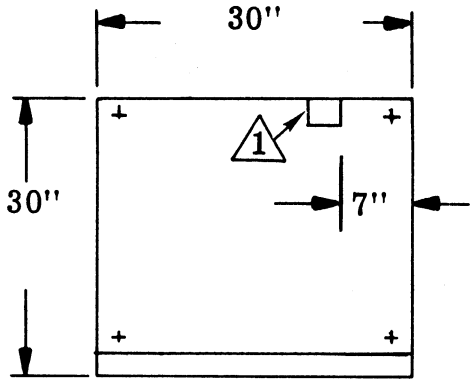
CIRCUIT BREAKER 20 AMP 1 POLES

WIRE 3 QTY (Incl Ground) NO. 12 AWG

PHASE SENSITIVE [ ] YES [X] NO

HEAT GAIN 5.8 KBTU

MAG TAPE UNIT	MTU0410



GENERAL INFORMATION

Installed Weight	800 Lbs
Shipping Weight	850 Lbs
Installed Height	65.5 In
Shipping Height	65.5 In
Full Scale Template	-
Required Clearances	
Front	36 In
Back	30 In
Right	-
Left	-

Spacing Restriction Cable length to Mag Tape Processor

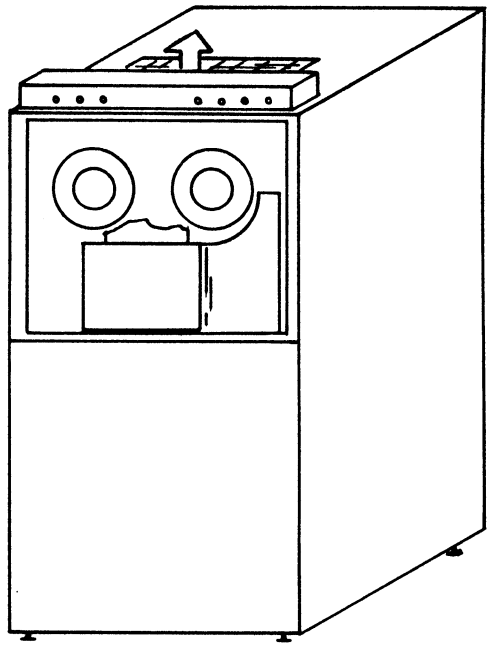
Cable Length 70 feet max.

NOTES

1. Cable and power entry cutout approx 4" X 4".

MAG TAPE UNIT	MTU0400/0500

Air



AC Power Requirements

NAMEPLATE RATING				TYPICAL VALUES			STARTING CURRENT
VOLTS 208	AMPS 7.5			AMPS PER PHASE	KVA	KW	30 Amps for 0.2 Sec
PHASE 3	CYCLE 60			A 6.2 B 5.7 C 6.2	2.2	1.8	

AC Power Connection

AC POWER CORD

INCLUDED	OPTIONAL	NOT AVAIL
☐	☒	☐

AC PLUG	Hubbell	25415
CONNECTOR	Hubbell	25414
RECEPTACLE	Hubbell	25403

RECOMMENDED FACILITY WIRING

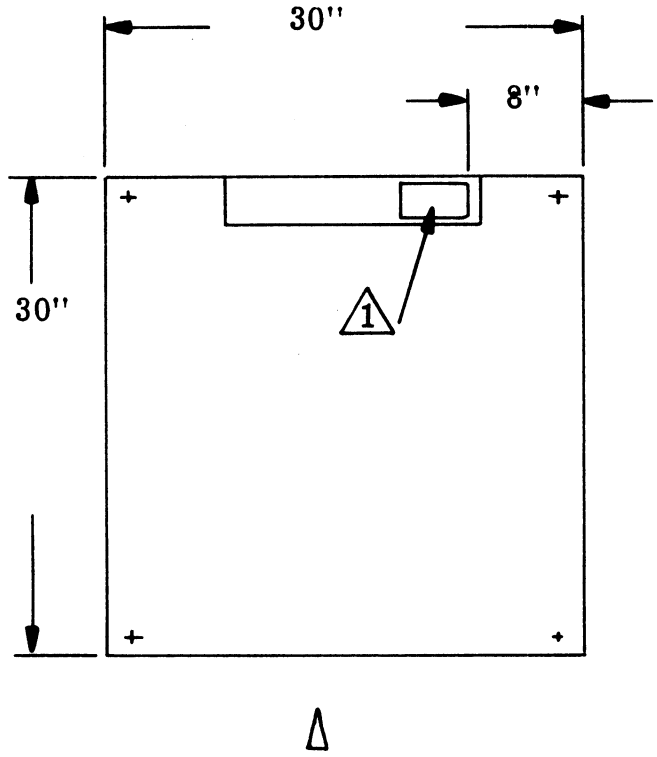
CIRCUIT BREAKER 15 AMP 3 POLES

WIRE 4 QTY (Incl Ground) NO. 14 AWG

PHASE SENSITIVE ☒ YES ☐ NO

HEAT GAIN 6.1 KBTU

MAG TAPE UNIT	MTU0400/0500



GENERAL INFORMATION

Installed Weight	750 Lbs
Shipping Weight	800 Lbs
Installed Height	65.5 In
Shipping Height	65.5 In
Full Scale Template	43R177800-43

Required Clearances	
Front	36 In
Back	30 In
Right	-
Left	-

Spacing Restriction Cable length to Mag Tape Processor

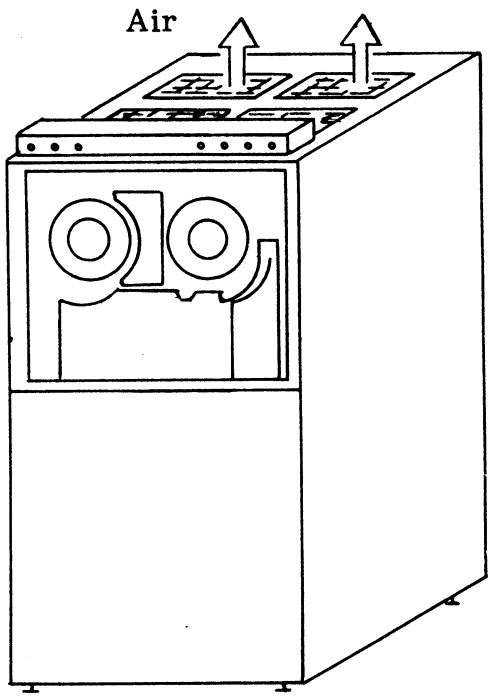
Cable Length 70 feet max.

NOTES

1 Cable and power entry cutout approx 4" X 6".

2. Power cable must be ordered on IPL if required.

MAG TAPE UNIT	MTU0600



AC Power Requirements

NAMEPLATE RATING				TYPICAL VALUES				STARTING CURRENT
VOLTS	208	AMPS	15	AMPS PER PHASE A / B / C	KVA	KW		65 Amp for 0.5 Sec
PHASE	3	CYCLE	60	8.9 / 11.7 / 10.6	4.2	3.8		

AC Power Connection

AC POWER CORD

	INCLUDED	OPTIONAL	NOT AVAIL
	☐	☒	☐

AC PLUG	Hubbell	25415
CONNECTOR	Hubbell	25414
RECEPTACLE	Hubbell	25403

RECOMMENDED FACILITY WIRING

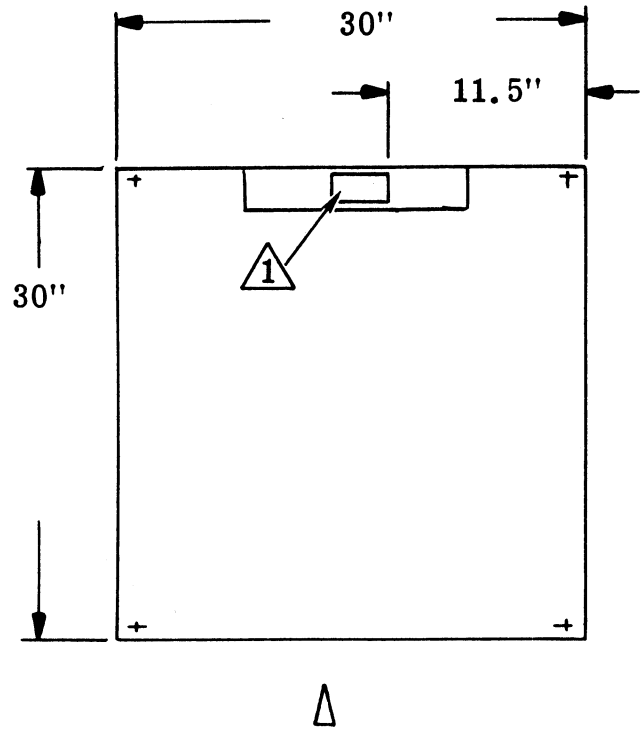
CIRCUIT BREAKER 20 AMP 3 POLES

WIRE 4 QTY (Incl Ground) NO. 12 AWG

PHASE SENSITIVE ☒ YES ☐ NO

HEAT GAIN 13.0 KBTU

MAG TAPE UNIT	MTU0600



GENERAL INFORMATION

Installed Weight	1025 Lbs
Shipping Weight	1050 Lbs
Installed Height	65.5"
Shipping Height	65.5"
Full Scale Template	43R177800-43

Required Clearances

Front	36"
Back	30"
Right	-
Left	-

Spacing Restriction: cable length to Mag Tape Processor

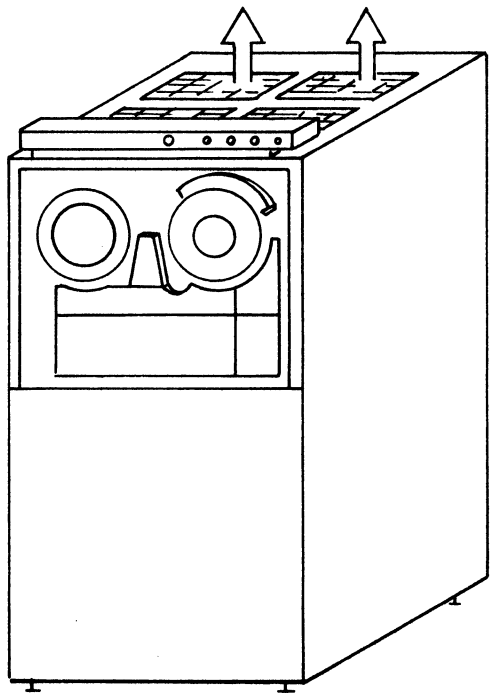
Cable Length: 70 feet max.

NOTES

1 Cable and power entry cutout approx 4" X 6".

2. Power cable must be ordered on IPL if required.

MAG TAPE UNIT	MTU0610



AC Power Requirements

NAMEPLATE RATING		TYPICAL VALUES			STARTING CURRENT
VOLTS 208 AMPS 11.5		AMPS PER PHASE	KVA	KW	
PHASE 3 CYCLE 60		A 9.8 B 9.8 C 9.2	3.1	2.9	

AC Power Connection

AC POWER CORD

INCLUDED	OPTIONAL	NOT AVAIL
☐	☒	☐

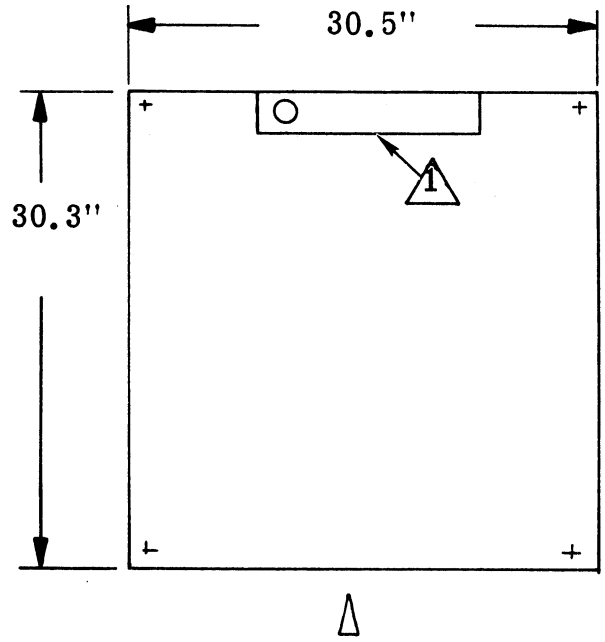
AC PLUG HUBBELL 25415
CONNECTOR HUBBELL 25414
RECEPTACLE HUBBELL 25403

RECOMMENDED FACILITY WIRING

CIRCUIT BREAKER 15 AMP 3 POLES
WIRE 4 QTY (Incl Ground) NO. 14 AWG
PHASE SENSITIVE ☒ YES ☐ NO

HEAT GAIN 9.9 KBTU

MAG TAPE UNIT	MTU0610



GENERAL INFORMATION

Installed Weight	900 Lbs
Shipping Weight	950 Lbs
Installed Height	65.5 In
Shipping Height	65.5 In
Full Scale Template	NA

Required Clearances

Front	36 In
Back	30 In
Right	-
Left	-

Spacing Restriction

Cable length to MTP

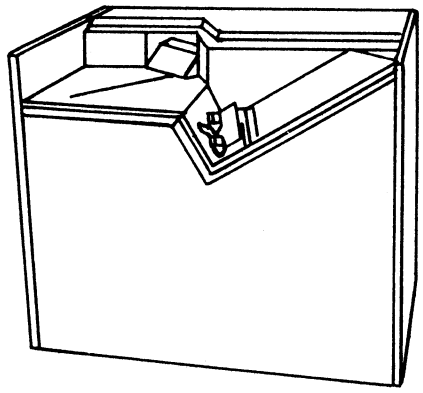
Cable Length

70 feet max.

NOTES

1. Cable & power entry cutout aprox. 4" X 6".

CARD READER UNIT	CRU1050



AC Power Requirements

NAMEPLATE RATING				TYPICAL VALUES			STARTING CURRENT
VOLTS 120	AMPS 14			AMPS PER PHASE	KVA	KW	
PHASE 1	CYCLE 60			A 9.2 B ____ C ____	1.1	1.0	-

AC Power Connection

AC POWER CORD

INCLUDED	OPTIONAL	NOT AVAIL
[X]	[ ]	[ ]

AC PLUG	Hubbell	2311
CONNECTOR	Hubbell	2313
RECEPTACLE	Hubbell	2310

RECOMMENDED FACILITY WIRING

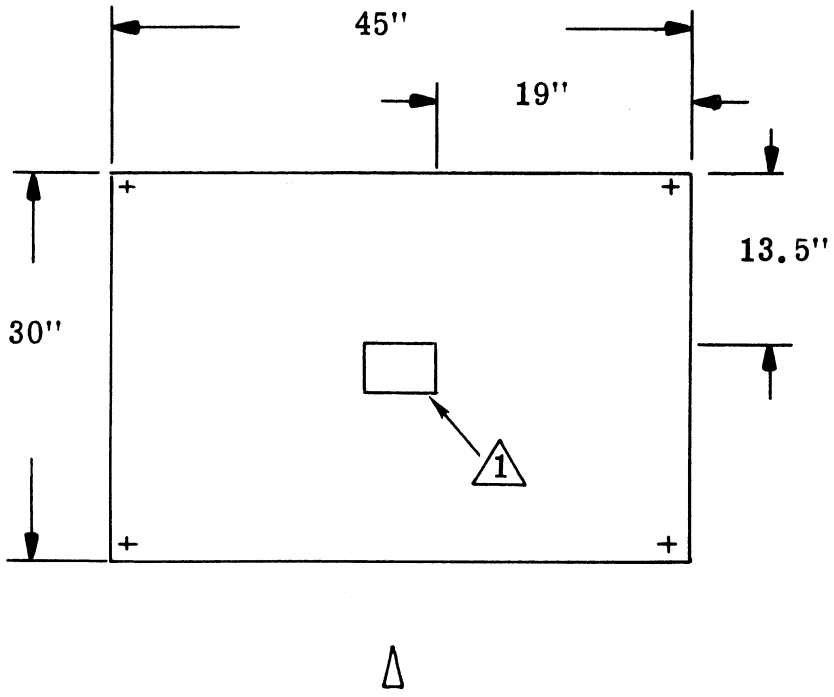
CIRCUIT BREAKER 20 AMP 1 POLES

WIRE 3 QTY (Incl Ground) NO. 12 AWG

PHASE SENSITIVE [ ] YES [X] NO

HEAT GAIN 3.4 KBTU

CARD READER UNIT	CRU1050



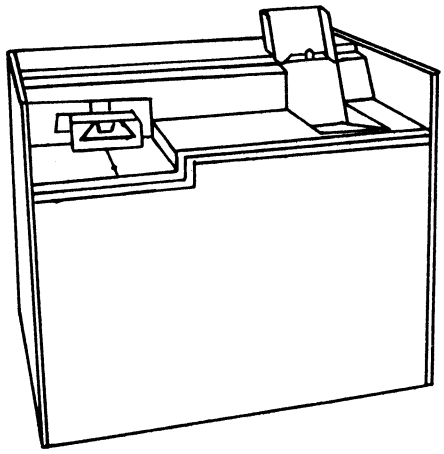
GENERAL INFORMATION

Installed Weight	460 Lbs
Shipping Weight	500 Lbs
Installed Height	36.1 In
Shipping Height	36.1 In
Full Scale Template	43R177800-62
Required Clearances	
Front	36 In
Back	30 In
Right	-
Left	-
Spacing Restriction	Cable length to Unit Record Processor
Cable Length	70 feet max.

NOTES

1. Cable and power entry cutout approx 4" X 6".

PUNCH CARD UNIT	PCU0120



AC Power Requirements

NAMEPLATE RATING				TYPICAL VALUES			STARTING CURRENT
VOLTS 120/208	AMPS 11			AMPS PER PHASE	KVA	KW	-
PHASE 3	CYCLE 60			A 4.6 B 3.3 C 5.4	1.6	1.3	

AC Power Connection

AC POWER CORD

INCLUDED	OPTIONAL	NOT AVAIL
[X]	[ ]	[ ]

AC PLUG	Hubbell	25415
CONNECTOR	Hubbell	25414
RECEPTACLE	Hubbell	25403

RECOMMENDED FACILITY WIRING

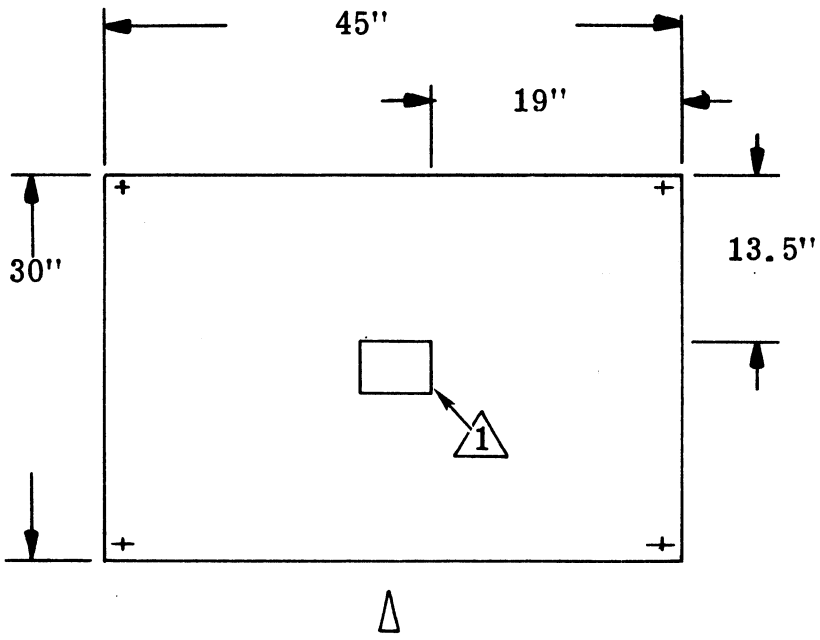
CIRCUIT BREAKER 15 AMP 3 POLES

WIRE 5 QTY (Incl Ground) NO. 14 AWG

PHASE SENSITIVE [ ] YES [X] NO

HEAT GAIN 4.6 KBTU

PUNCH CARD UNIT	PCU0120



GENERAL INFORMATION

Installed Weight	800 Lbs
Shipping Weight	850 Lbs
Installed Height	44.3 In
Shipping Height	44.3 In
Full Scale Template	43R177800-64

Required Clearances

Front	36 In
Back	30 In
Right	-
Left	-

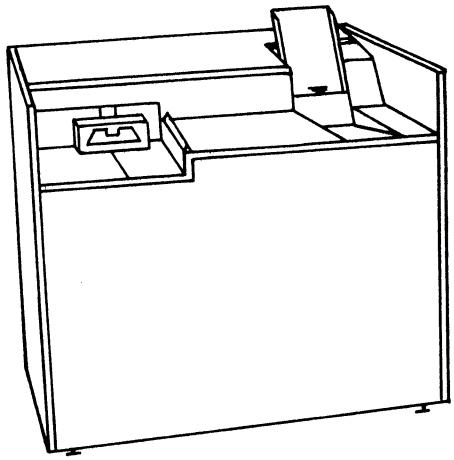
Spacing Restriction Cable length to Unit Record Processor

Cable Length 70 feet max.

NOTES

1. Cable and power entry cutout approx. 4" X 6".

CARD READER/PUNCH	PCU0121/CCU0401



AC Power Requirements

NAMEPLATE RATING				TYPICAL VALUES			STARTING CURRENT
VOLTS 120/208	AMPS 10			AMPS PER PHASE	KVA	KW	
PHASE 3	CYCLE 60			A 7.0 B 8.5 C 8.0	2.8	2.5	—

AC Power Connection

AC POWER CORD

INCLUDED	OPTIONAL	NOT AVAIL
[X]	[ ]	[ ]

AC PLUG Hubbell 25415

CONNECTOR Hubbell 25414

RECEPTACLE Hubbell 25403

RECOMMENDED FACILITY WIRING

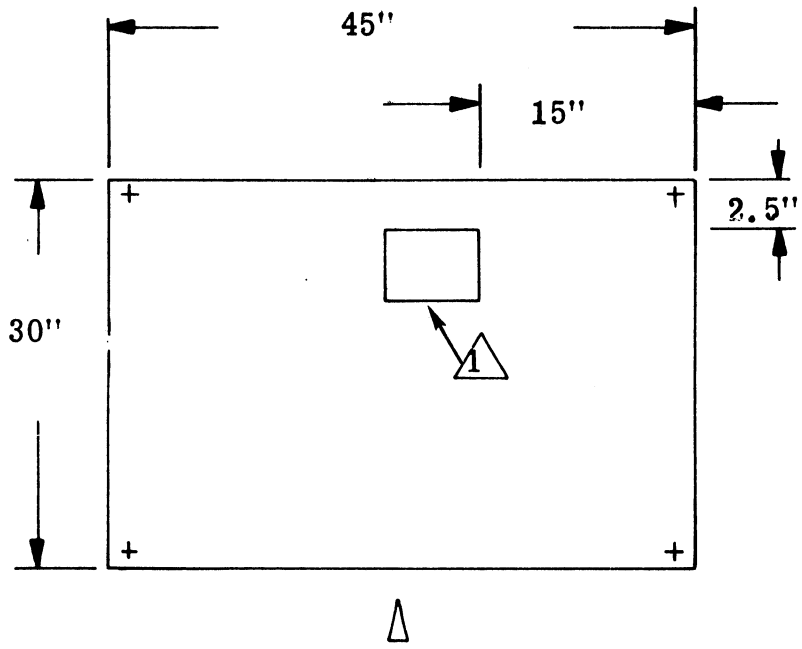
CIRCUIT BREAKER 15 AMP 3 POLES

WIRE 5 QTY (Incl Ground) NO. 14 AWG

PHASE SENSITIVE [ ] YES [X] NO

HEAT GAIN 8.5 KBTU

CARD READER/PUNCH	PCU0121/CCU0401



GENERAL INFORMATION

Installed Weight	800 Lbs
Shipping Weight	850 Lbs
Installed Height	40 In
Shipping Height	40 In
Full Scale Template	NA
Required Clearances	
Front	36 In
Back	30 In
Right	30 In
Left	30 In

Spacing Restriction

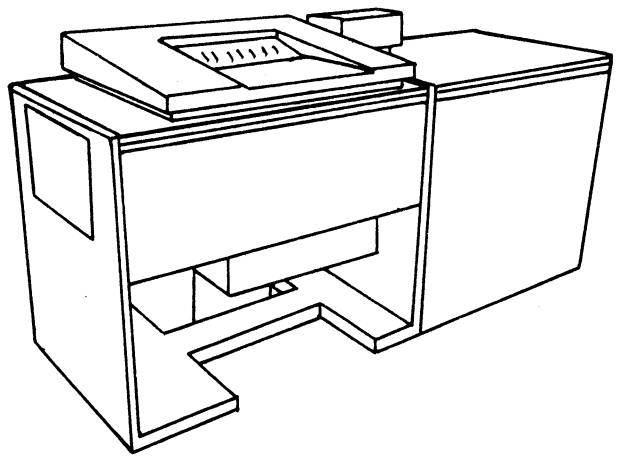
Cable length to Unit Record Processor

Cable Length 70 feet max.

NOTES

1. Cable & Power entry cutout aprox. 4" X 6".

PRINTER UNIT	PRU 1100



AC Power Requirements

NAMEPLATE RATING				TYPICAL VALUES				STARTING CURRENT
VOLTS	120/208	AMPS	9	AMPS PER PHASE		KVA	KW	-
PHASE	3	CYCLE	60	A 6.5	B 7.2 C 6.5	2.2	1.9	

AC Power Connection

AC POWER CORD

INCLUDED	OPTIONAL	NOT AVAIL
[X]	[ ]	[ ]

AC PLUG	Hubbell	25415
CONNECTOR	Hubbell	25414
RECEPTACLE	Hubbell	25403

RECOMMENDED FACILITY WIRING

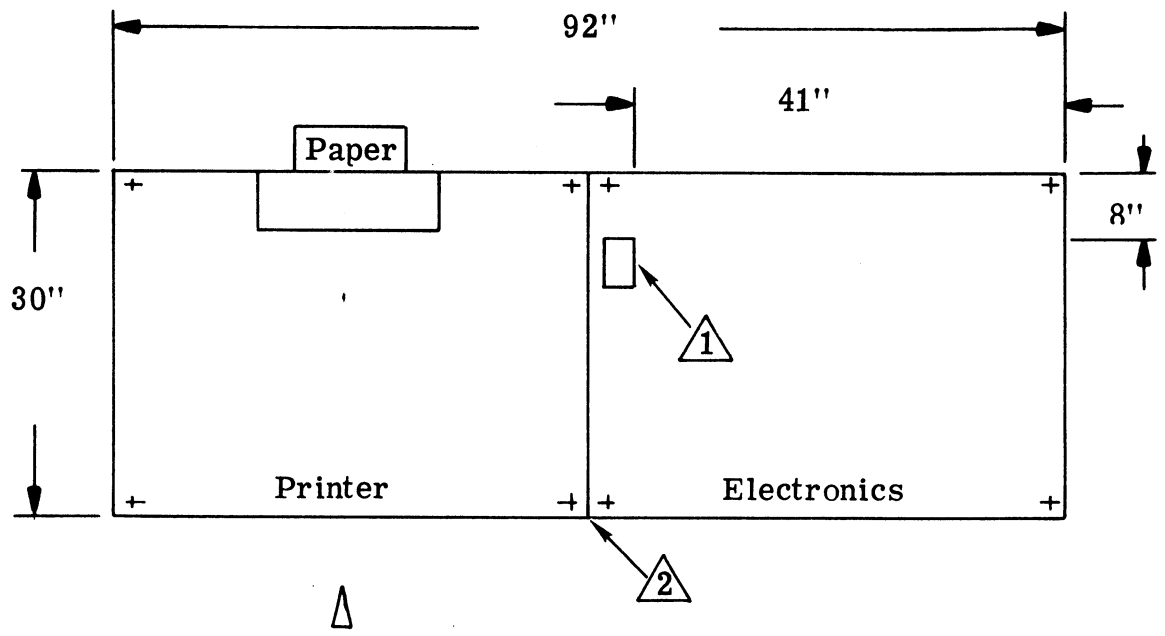
CIRCUIT BREAKER 15 AMP 3 POLES

WIRE 5 QTY (Incl Ground) NO. 14 AWG

PHASE SENSITIVE [ ] YES [X] NO

HEAT GAIN 6.6 KBTU

PRINTER UNIT	PRU 1100



GENERAL INFORMATION

Installed Weight	1220 Lbs
Shipping Weight	1300 Lbs
Installed Height	40 In
Shipping Height	40 In
Full Scale Template	43R177800-60

Required Clearances

Front	36 In
Back	30 In
Right	-
Left	30 In

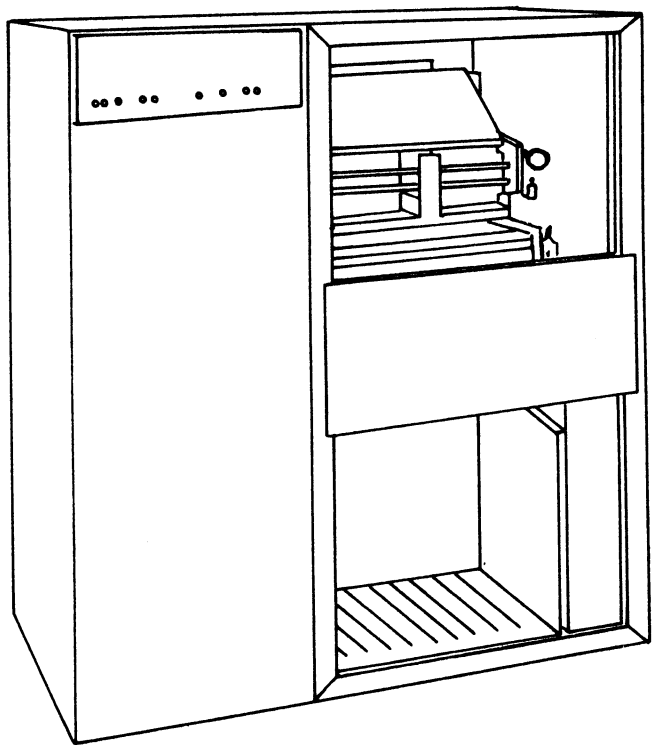
Spacing Restriction Cable length to Unit Record Processor

Cable Length 70 feet max.

NOTES

1. Cable and power entry cutout approximately 4" X 6".
2. Unit ships in two sections to be bolted together at installation.

PRINTER UNIT	PRU 1200/1600



AC Power Requirements

NAMEPLATE RATING				TYPICAL VALUES			STARTING CURRENT
VOLTS 120/208	AMPS 11			AMPS PER PHASE	KVA	KW	-
PHASE 3	CYCLE 60			A 7.6 B 8.4 C 7.8	3.1	2.8	

AC Power Connection

AC POWER CORD

	INCLUDED	OPTIONAL	NOT AVAIL
	☐	☒	☐
AC PLUG	Hubbell	25415	
CONNECTOR	Hubbell	25414	
RECEPTACLE	Hubbell	25403	

RECOMMENDED FACILITY WIRING

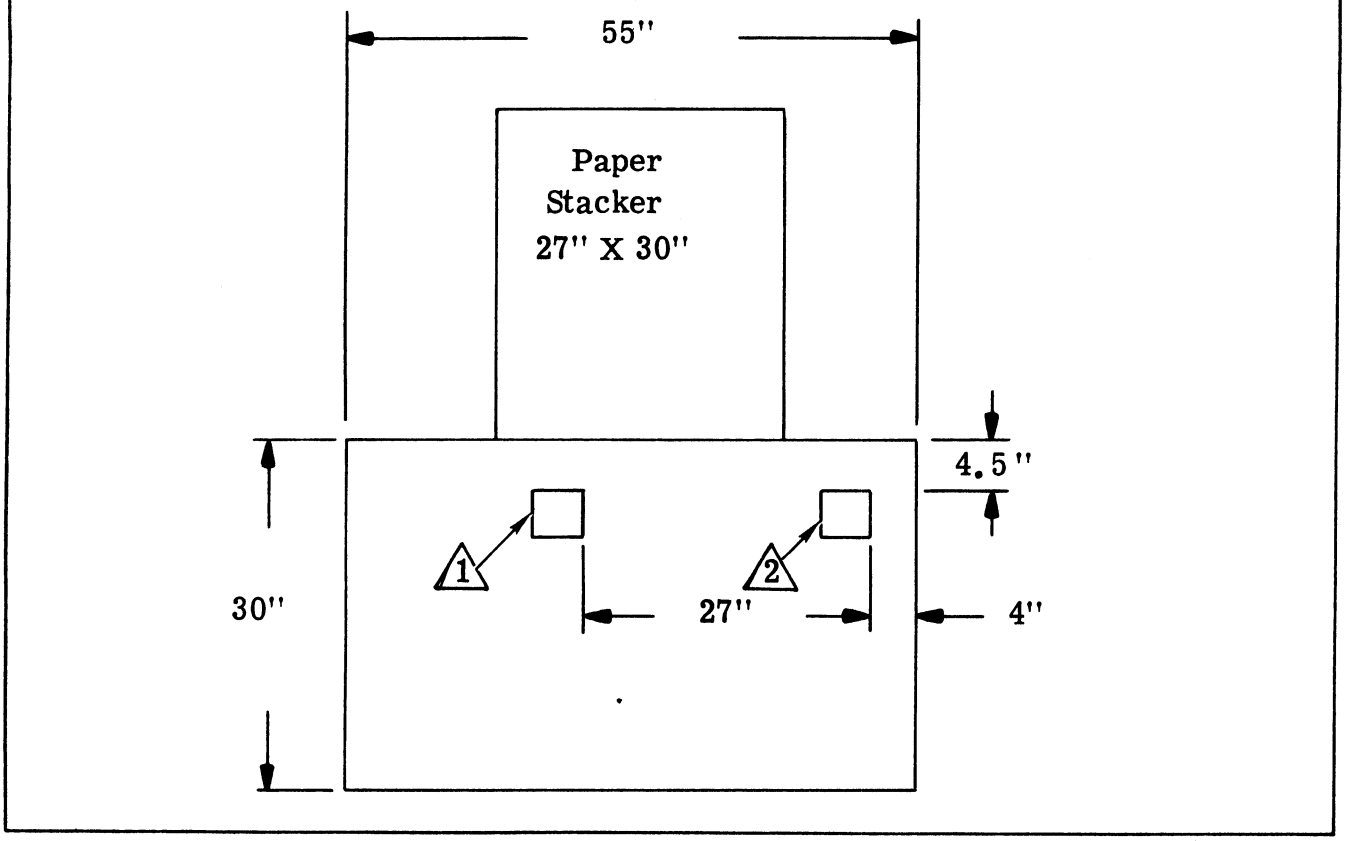
CIRCUIT BREAKER 15 AMP 3 POLES

WIRE 5 QTY (Incl Ground) NO. 14 AWG

PHASE SENSITIVE ☐ YES ☒ NO

HEAT GAIN 9.5 KBTU

PRINTER UNIT	PRU 1200/1600



GENERAL INFORMATION

Installed Weight	1780 Lbs	
Shipping Weight	1900 Lbs	
Installed Height	61 In	
Shipping Height	61 In	
Full Scale Template	-	
Required Clearances		
Front	36 In	
Back	60 In	(includes paper stacker)
Right	30 In	
Left	30 In	
Spacing Restriction	cable length to Unit Record Processor	
Cable Length	70 feet max.	

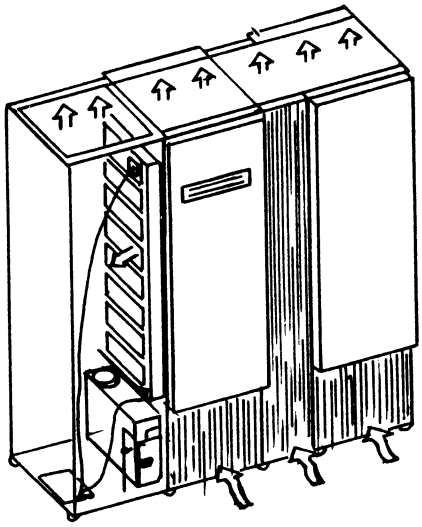
NOTES

1. Cable entry cutout approx. 4" X 4".
2. Power entry cutout approx. 4" X 4".
3. Weight includes 50 Lbs for stacker.

DOCUMENT HANDLER PROCESSOR	DHP0700/0701 - DEC 6000

See Note Below

Cooling Air Exhaust



Ref: 355AA

AC Power Requirements

NAMEPLATE RATING				TYPICAL VALUES			STARTING CURRENT
VOLTS 120/208	AMPS 10			AMPS PER PHASE	KVA	KW	
PHASE 3	CYCLE 60			A 3.6 B 3.6 C 8.6	1.8	1.5	

AC Power Connection

AC POWER CORD

INCLUDED	OPTIONAL	NOT AVAIL
☐	☐	☒

AC PLUG -

CONNECTOR -

RECEPTACLE -

RECOMMENDED FACILITY WIRING

CIRCUIT BREAKER 20 AMP 3 POLES

WIRE 5 QTY (Incl Ground) NO. 12 AWG

PHASE SENSITIVE ☐ YES ☒ NO

Requires regulated power from motor generator.

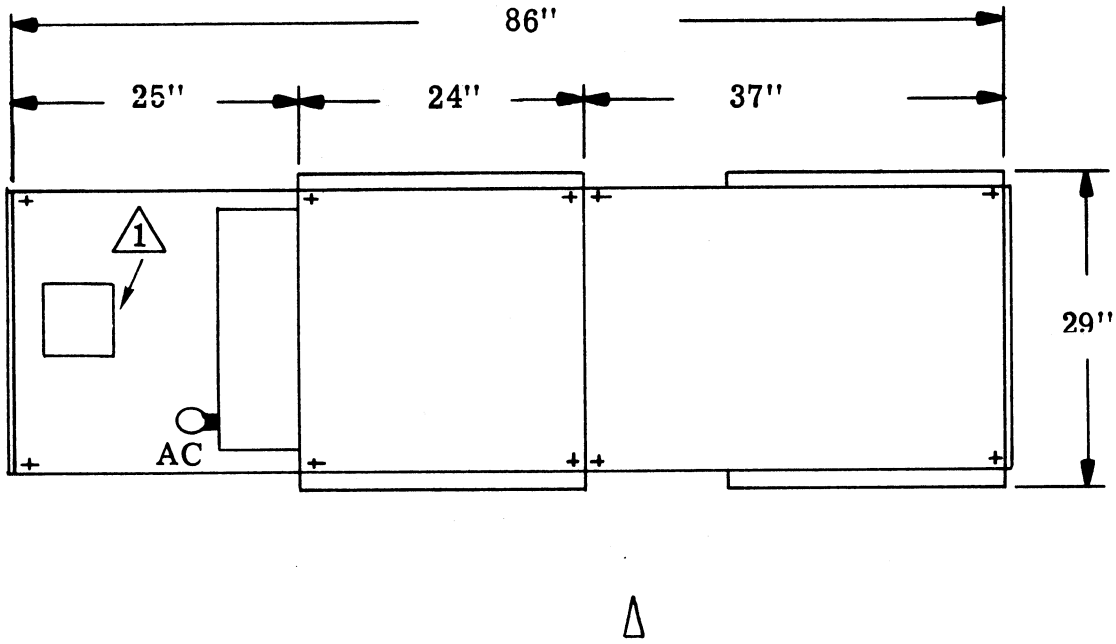
HEAT GAIN 5.1 KBTU

NOTE

This processor has three possible configurations. Confirm at time of order which will be supplied to assure correct site preparation.

CONFIGURATION	REFERENCE	SHEETS
1	355 AA2	1 & 2
2	355 AB1	3 & 4
3	6600 AA	5 & 6

DOCUMENT HANDLER PROCESSOR	DHP0700/0701 - DEC 6000



Ref: 355AA

GENERAL INFORMATION

Installed Weight	1700 Lbs
Shipping Weight	1800 Lbs
Installed Height	76 In
Shipping Height	76 In
Full Scale Template	43R177800-22

Required Clearances	
Front	36 In
Back	30 In
Right	-
Left	-

Spacing Restriction Cable length to IOM

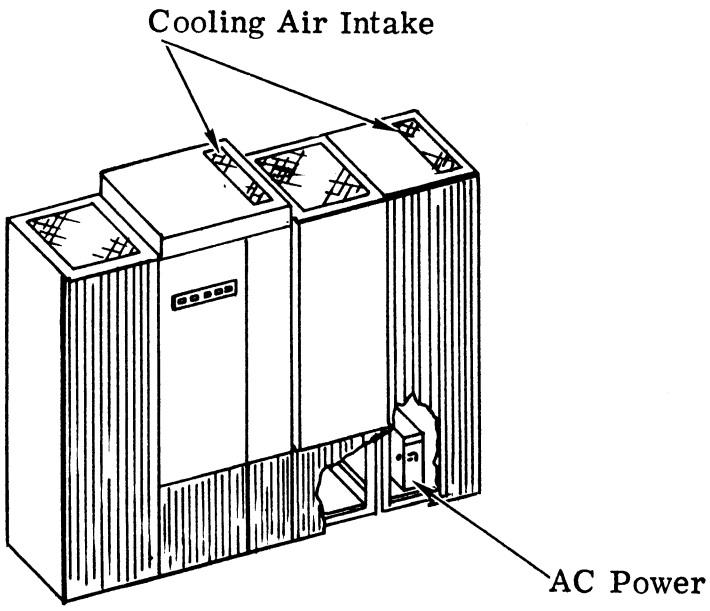
Cable Length 70 feet max.

NOTES

1. Cable and power entry cutout approx. 6" X 6".
2. Processor ships in three sections

DOCUMENT HANDLER PROCESSOR	DHP0700/0701 - DEC 6000

See Note - Sheet 1



Ref: 355AC 1

AC Power Requirements

NAMEPLATE RATING				TYPICAL VALUES			STARTING CURRENT
VOLTS 120/208	AMPS 13			AMPS PER PHASE	KVA	KW	-
PHASE 3	CYCLE 60			A 7.0 B 6.5 C 6.5	2.4	2.2	

AC Power Connection

AC POWER CORD

INCLUDED	OPTIONAL	NOT AVAIL
☐	☐	☒

AC PLUG -

CONNECTOR -

RECEPTACLE -

RECOMMENDED FACILITY WIRING

CIRCUIT BREAKER 30 AMP 3 POLES

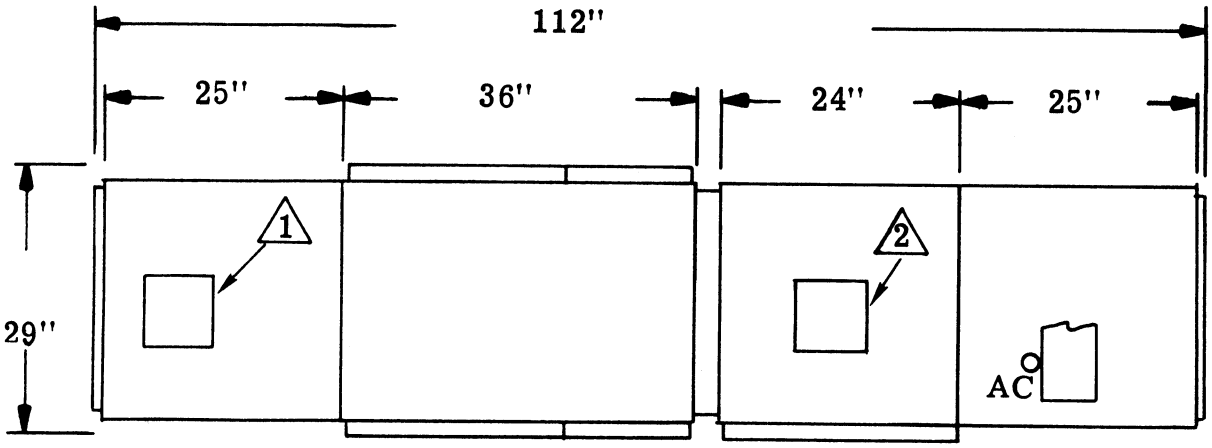
WIRE 5 QTY (Incl Ground) NO. 10 AWG

PHASE SENSITIVE ☐ YES ☒ NO

Requires regulated power from motor generator.

HEAT GAIN 7.5 KBTU

DOCUMENT HANDLER PROCESSOR	DHP0700/0701 - DEC 6000



Ref: 355 AB

GENERAL INFORMATION

Installed Weight	2100 Lbs
Shipping Weight	2200 Lbs
Installed Height	88.6 In
Shipping Height	76.3 In
Full Scale Template	43R177800-24

Required Clearances

Front	36 In
Back	30 In
Right	-
Left	-

Spacing Restriction Cable length to IOM.

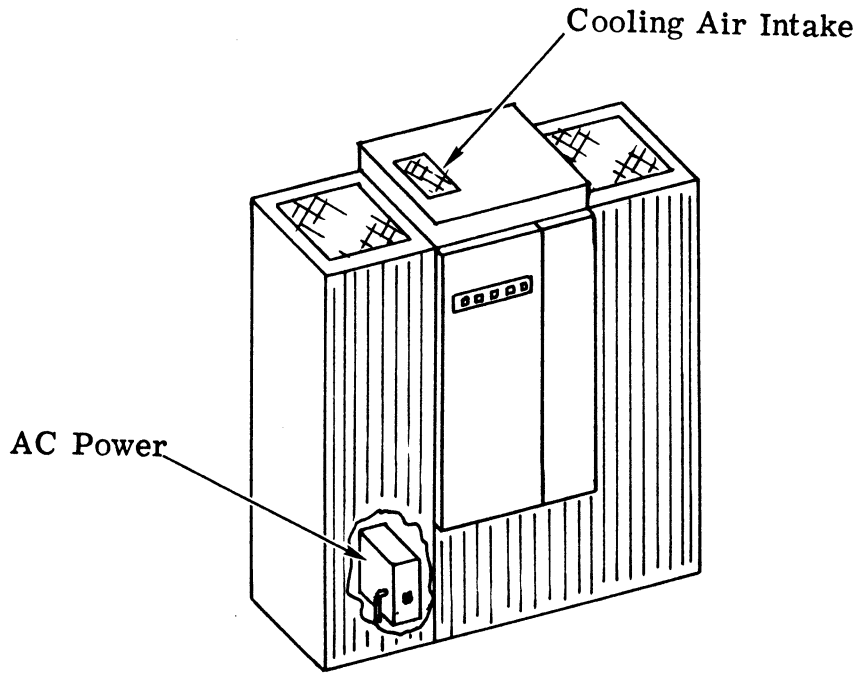
Cable Length 70 feet max.

NOTES

1. Logic cable entry cutout approx 6" X 6".
2. Logic and power entry cutout approx 6" X 6".
3. Processor ships in four sections.

DOCUMENT HANDLER PROCESSOR	DHP0700/0701 - DEC 6000

See Note Sheet 1



Ref: 6600 AA

AC Power Requirements

NAMEPLATE RATING				TYPICAL VALUES			STARTING CURRENT
VOLTS 120/208	AMPS 11			AMPS PER PHASE	KVA	KW	
PHASE 3	CYCLE 60			A 7.8 B 6.8 C 6.3	2.4	2.1	

AC Power Connection

AC POWER CORD

INCLUDED	OPTIONAL	NOT AVAIL
☐	☐	☒

AC PLUG -

CONNECTOR -

RECEPTACLE -

RECOMMENDED FACILITY WIRING

CIRCUIT BREAKER 15 AMP 3 POLES

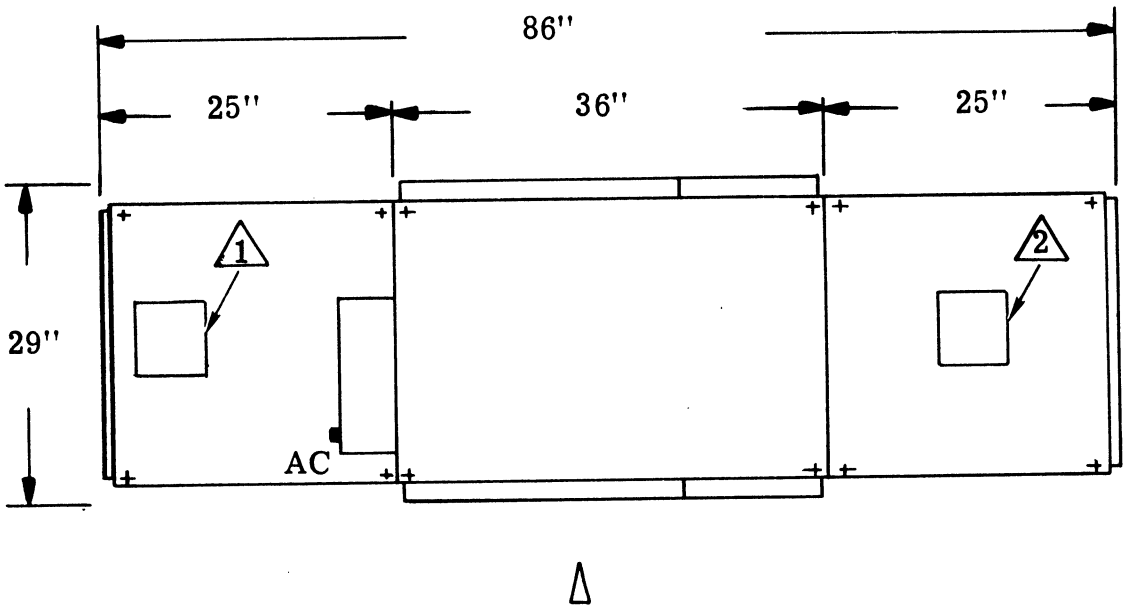
WIRE 5 QTY (Incl Ground) NO. 14 AWG

PHASE SENSITIVE ☐ YES ☒ NO

Requires regulated power from motor generator

HEAT GAIN 7.2 KBTU

DOCUMENT HANDLER PROCESSOR	DHP0700/0701 - DEC 6000



Ref: 6600 AA

GENERAL INFORMATION

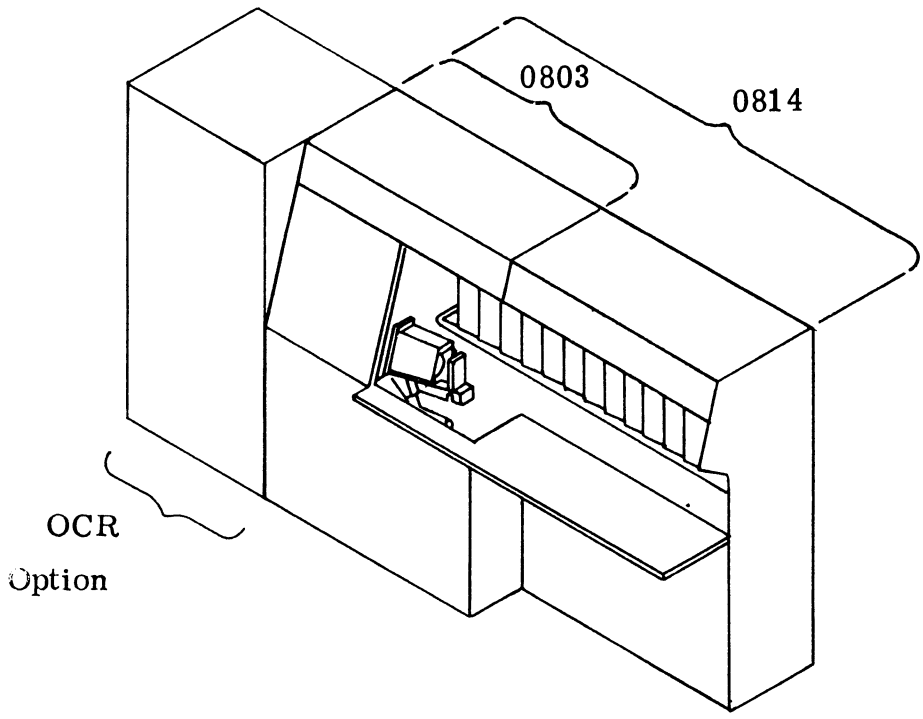
Installed Weight	2000 Lbs
Shipping Weight	2100 Lbs
Installed Height	88.6 In
Shipping Height	76.3 In
Full Scale Template	43R177800 Sh 20
Required Clearances	
Front	36 In
Back	30 In
Right	-
Left	-
Spacing Restriction	Cable length to IOM
Cable Length	70 feet max.

NOTES

1. Logic and power entry cutout approx 6" X 6".
2. Logic cable cutout approx 6" X 6".
3. Processor ships in three sections.

DOCUMENT HANDLER UNIT	DHU 0803/0814

See Note



AC Power Requirements

NAMEPLATE RATING		TYPICAL VALUES			STARTING CURRENT
VOLTS 120/208	AMPS 8.5	AMPS PER PHASE	KVA	KW	-
PHASE 3	CYCLE 60	A 8.0 B 8.2 C 6.1	2.5	2.1	

AC Power Connection

AC POWER CORD

INCLUDED	OPTIONAL	NOT AVAIL
☐	☐	☒

AC PLUG -

CONNECTOR -

RECEPTACLE -

RECOMMENDED FACILITY WIRING

CIRCUIT BREAKER 15 AMP 3 POLES

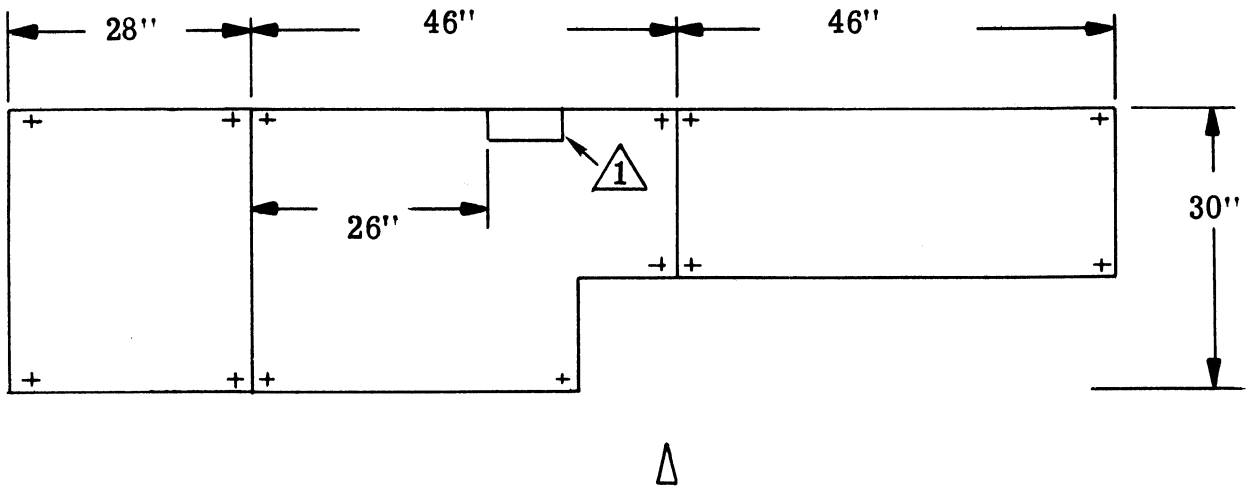
WIRE 5 QTY (Incl Ground) NO. 14 AWG

PHASE SENSITIVE ☒ YES ☐ NO

Incorrect rotation may damage unit.

HEAT GAIN 7.2 KBTU

DOCUMENT HANDLER UNIT	DHU 0803/0814



GENERAL INFORMATION

Installed Weight	1700 Lbs
Shipping Weight	1700 Lbs
Installed Height	62 In
Shipping Height	62 In
Full Scale Template	

Required Clearances	
Front	36 In
Back	30 In
Right	-
Left	-

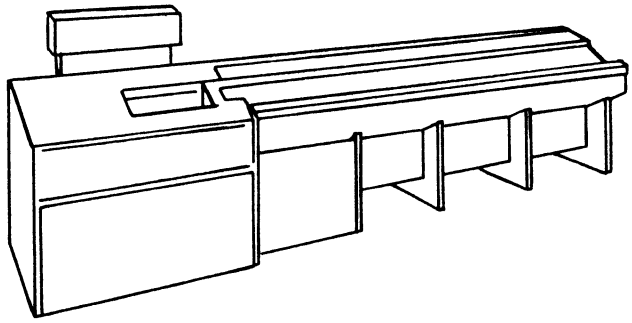
Spacing Restriction Cable to Document Handler Processor

Cable Length 90 feet max.

NOTES

1. Cable and power entry cutout approx 4" X 6".
2. Unit ships in 3 sections.

DOCUMENT HANDLER UNIT	DHU 1604/1608/1612/1616



AC Power Requirements

NAMEPLATE RATING				TYPICAL VALUES			STARTING CURRENT
VOLTS 208	AMPS 50			AMPS PER PHASE A 27.0 B 27.0 C	KVA 5.6	KW 4.8	85 Amps 2 Sec Max
PHASE 1	CYCLE 60						

AC Power Connection

AC POWER CORD

INCLUDED	OPTIONAL	NOT AVAIL
☐	☐	☒

AC PLUG -

CONNECTOR -

RECEPTACLE -

RECOMMENDED FACILITY WIRING

CIRCUIT BREAKER 70 AMP 2 POLES

WIRE 3 QTY (Incl Ground) NO. 4 AWG

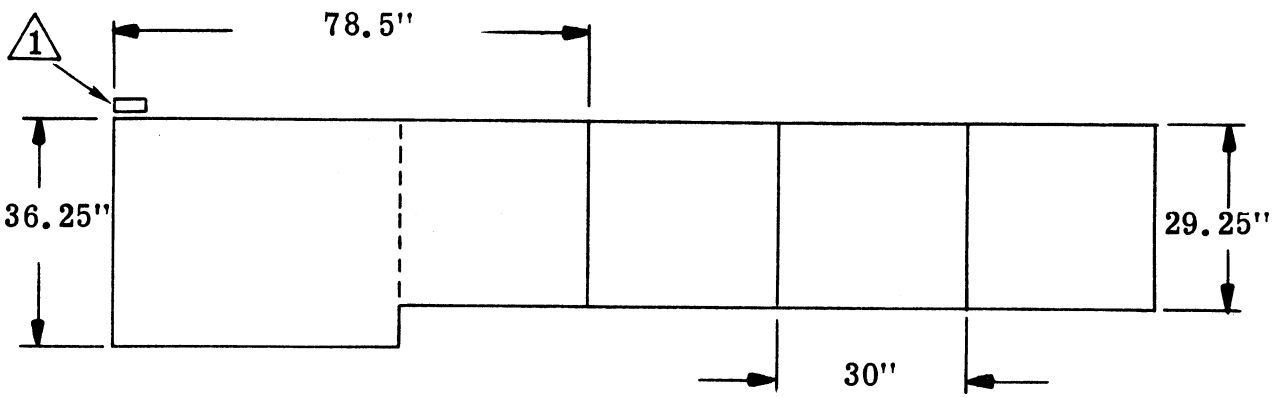
PHASE SENSITIVE ☐ YES ☒ NO

NOTES:

1. A.C. power must be in accordance with Honeywell specification which requires isolation from loads other than the Computer System Units.
2. Ground braid must be installed from the sorter to Motor Generator ground or the equivalent.

HEAT GAIN 16.4 KBTU

DOCUMENT HANDLER UNIT	DHU 1604/1608/1612/1616



Basic 4 Pocket Module

Typical
4 Pocket
Add-On
Module
- Max of 3 -

GENERAL INFORMATION

Installed Weight	See Note 2
Shipping Weight	Add 25 Lbs per unit
Installed Height	54.2 In
Shipping Height	54.2 In
Full Scale Template	43R177800-63
Required Clearances	
Front	36 In
Back	30 In
Right	-
Left	30 In
Spacing Restriction	Cable length to Document Handler Processor
Cable Length	90 feet max.

NOTES

1. Cable and power entry cutout approximately 4" X 6".
2. Installed weights:
   Basic 4 pocket module -1200#
   4 Pocket Add-on module - 150#
3. Units shipped boxed and on skid. Adjustable feet attached at installation.
4. References - DRD236
   Burroughs 9134

DOCUMENT HANDLER UNIT	DHU 1620/1624/1628/1632

A Four Pocket Control Module must be added, at the right hand end, when the number of pockets exceeds 16.

A maximum of three additional Four Pocket Modules may then be inserted keeping the Four Pocket Control Module always as the rightmost unit.

AC Power Requirements

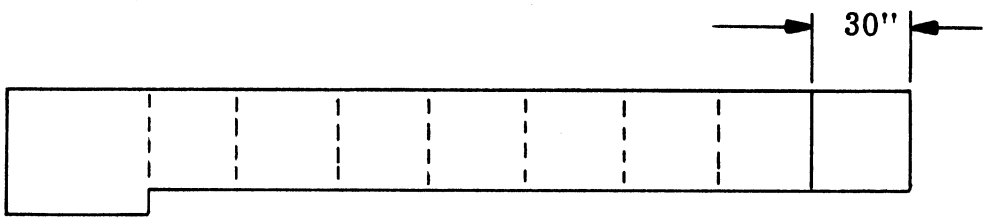
NAMEPLATE RATING	TYPICAL VALUES			STARTING CURRENT
	AMPS PER PHASE	KVA	KW	
Rated on Basic 4 Pocket Module	A 10 B 10 C ___	2.0	1.7	

AC Power Connection

AC POWER CORD	RECOMMENDED FACILITY WIRING
Connects to Basic 4 Pocket Module	Not Required

HEAT GAIN 5.8 KBTU

DOCUMENT HANDLER UNIT	DHU 1620/1624/1628/1632



4 Pocket
Control Module

GENERAL INFORMATION

Installed Weight	500 Lbs
Shipping Weight	525 Lbs
Installed Height	54.2 In
Shipping Height	54.2 In
Full Scale Template	43R177800-63

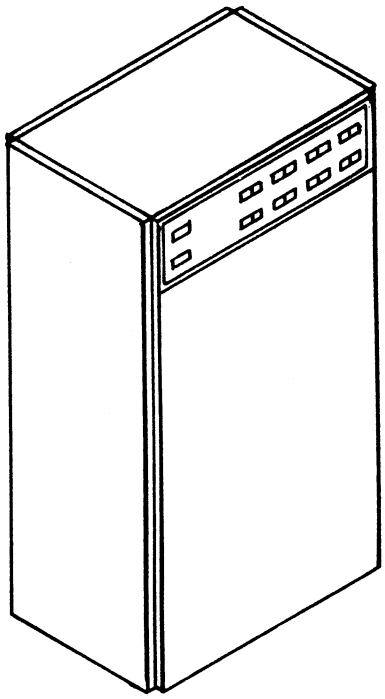
Required Clearances	
Front	36 In
Back	30 In
Right	-
Left	

Spacing Restriction See Sheet 2

NOTES

See Sheet 1

PERIPHERAL SWITCH UNIT	PSU0200/0201



AC Power Requirements

NAMEPLATE RATING				TYPICAL VALUES			STARTING CURRENT
VOLTS 120	AMPS 2			AMPS PER PHASE A 1.6 B 1.6 C -	KVA 0.4	KW 0.3	-
PHASE 2	CYCLE 60						

AC Power Connection

AC POWER CORD

INCLUDED	OPTIONAL	NOT AVAIL
☐	☐	☒

AC PLUG -

CONNECTOR -

RECEPTACLE -

RECOMMENDED FACILITY WIRING

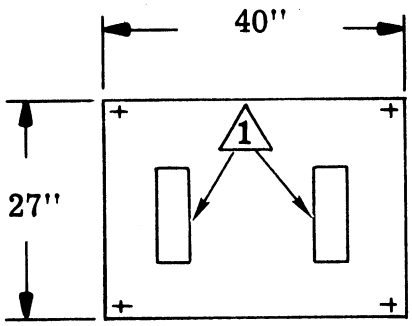
CIRCUIT BREAKER 15 AMP 2 POLES

WIRE 4 QTY (Incl Ground) NO. 14 AWG

PHASE SENSITIVE ☐ YES ☒ NO

HEAT GAIN 1 KBTU

PERIPHERAL SWITCH UNIT	PSU0200/0201



GENERAL INFORMATION

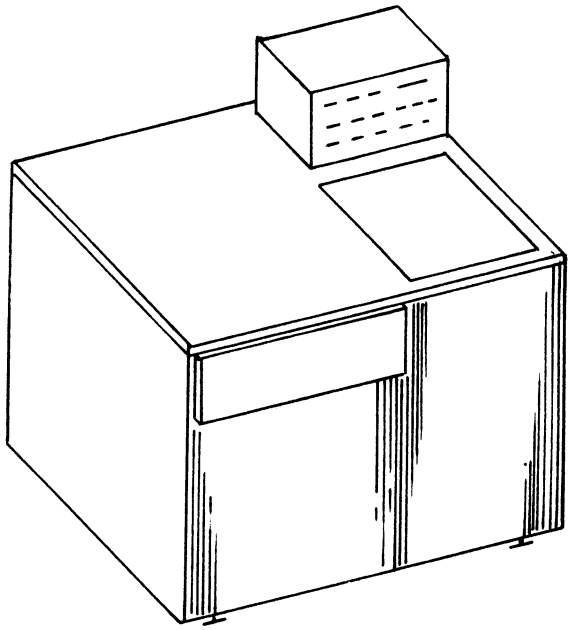
Installed Weight	400 Lbs
Shipping Weight	400 Lbs
Installed Height	71 In
Shipping Height	71 In
Full Scale Template	-
Required Clearances	
Front	36 In
Back	30 In
Right	-
Left	-

Spacing Restriction As determined by max length of peripheral cables. Subtract 6 ft. from max cable length for switch.

NOTES

1. Cable and power entry cutouts approx 4" X8".

BOARD TESTER	BTF655



AC Power Requirements

NAMEPLATE RATING		TYPICAL VALUES			STARTING CURRENT
VOLTS 120 AMPS 10		AMPS PER PHASE	KVA	KW	
PHASE 1 CYCLE 60		A 8.0 B - C -	1.0	0.9	NA

AC Power Connection

AC POWER CORD

INCLUDED	OPTIONAL	NOT AVAIL
[X]	[ ]	[ ]

AC PLUG Hubbell Twist-Lock

CONNECTOR

RECEPTACLE Hubbell 4700

NOTE 1

RECOMMENDED FACILITY WIRING

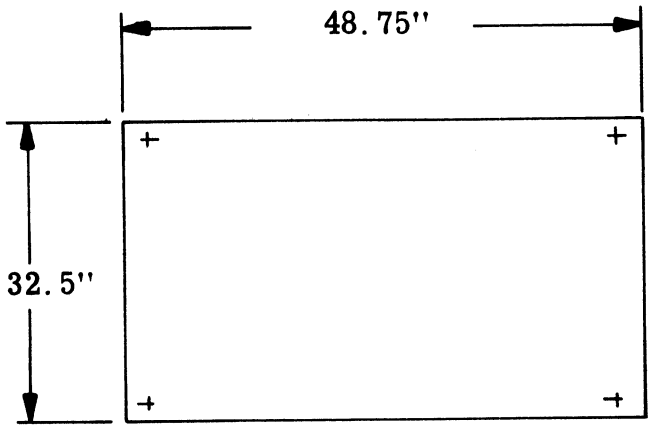
CIRCUIT BREAKER 15 AMP 1 POLES

WIRE 3 QTY (Incl Ground) NO. 14 AWG

PHASE SENSITIVE [ ] YES [X] NO

HEAT GAIN 3.0 KBTU

BOARD TESTER	BTF655



GENERAL INFORMATION

Installed Weight	720 Lbs
Shipping Weight	720 Lbs
Installed Height	51.5 In
Shipping Height	51.5 In
Full Scale Template	43R177800 SH 70

Required Clearances

Front	30 In
Back	-
Right	-
Left	-

Spacing Restriction

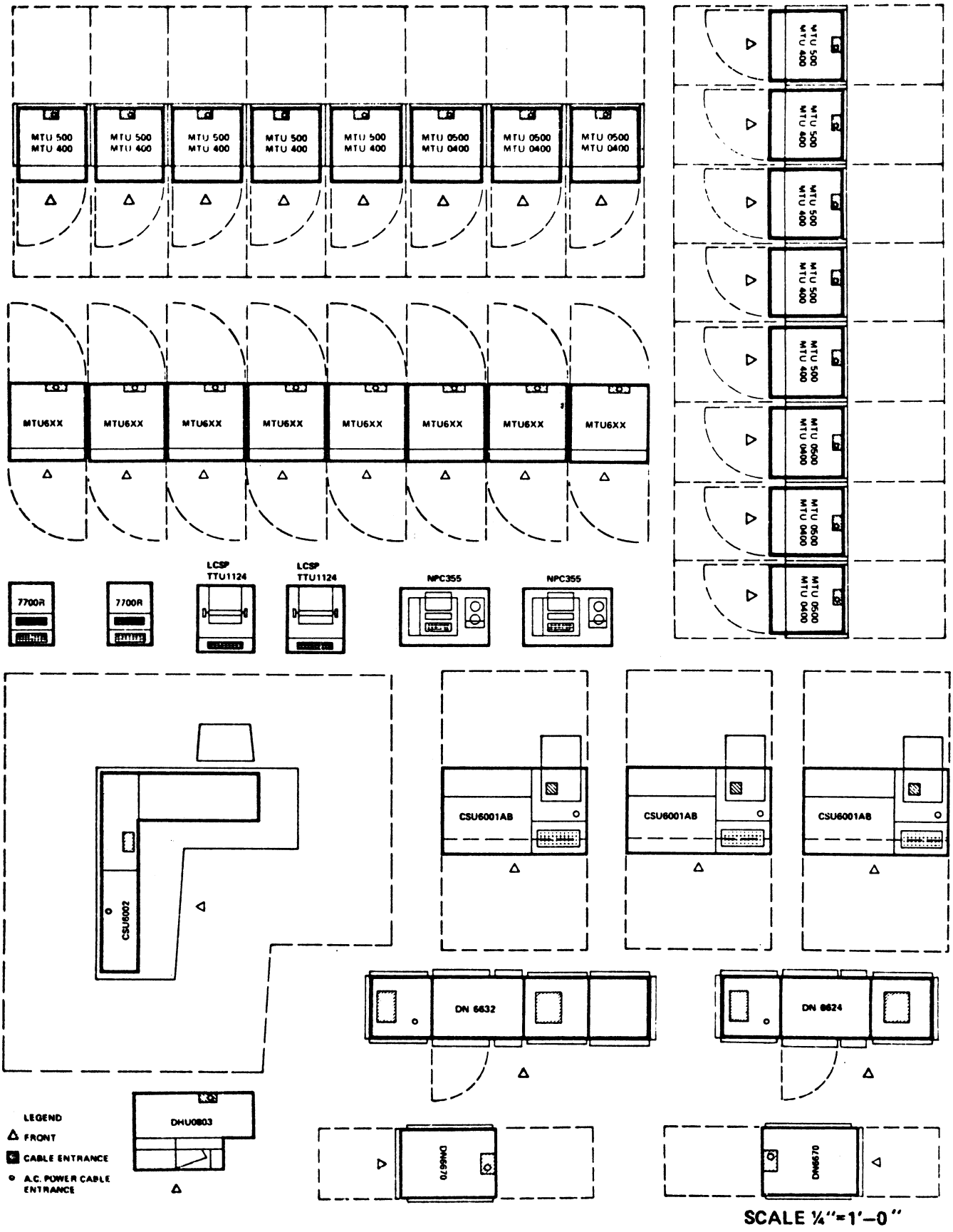
NOTES

1. Twist-Lock connector required due to leakage current.

SUMMARY DATA

Unit	Circuit Breaker	Wire	Amps. Per Phase A	B	C	KVA	KW	KBTU	WT
Central Processor - LV66	3P30A	5#10	8.0	7.0	8.0	2.8	2.5	8.5	1800
Central Processor - LV68	3P30A	5#10	9.0	9.8	9.8	3.6	3.3	11.5	1800
CPS 6650	3P30R	5#10	15.4	14.3	15.9	5.6	5.2	17.7	2700
CPS 8802	3P30A	5#10	17.1	18.7	16.6	6.4	6.0	20.5	2700
Integrated Control Unit	—	—	10.3	10.9	9.5	3.7	3.3	11.3	1425
Freestanding IOM	3P15A	5#14	7.5	6.5	4.0	2.4	2.2	7.5	1150
Freestanding SCU	3P15A	5#14	2.1	2.0	2.4	0.8	0.7	2.4	850
Freestanding Memory	3P15A	5#14	5.0	5.4	3.3	1.7	1.5	5.1	850
Compatibility Mode Option	3P20A	5#10	14.0	19.0	18.0	6.1	5.8	20.0	2860
System Console	3P15A	5#14	0.5	1.0	1.2	0.3	0.2	0.9	520
System Control Center	3P15A	5#14	2.6	2.6	2.6	0.9	0.8	2.8	850
DATANET—DCP6624/6632	3P15A	5#14	7.8	6.8	6.3	2.4	2.1	7.2	2000
Communications Base	3P15A	5#14	1.3	2.1	0.8	0.5	0.4	1.4	850
DATANET—DCP6670	3P30A	5#10	20.0	20.0	20.0	7.8	4.9	16.6	900
Peripheral Processor (MPC)	3P15A	5#14	5.2	4.0	5.4	1.8	1.6	5.5	700
Mass Storage MSU0310	3P15A	5#14	4.0	3.0	3.0	1.2	1.0	3.5	425
Mass Storage MSU0400	3P50A*	5#6*	5.0	7.0	5.0	2.0	1.6	5.6	850
Mass Storage MSU0451	2P20A	3#12	7.5	7.5	—	1.6	1.3	4.5	700
Mass Storage MSU0500	3P15A	5#14	7.5	7.5	7.5	2.7	2.3	7.9	1080
Mag Tape MTU0410	1P20A	3#12	17.0	—	—	2.1	1.7	5.8	800
Mag Tape MTU0500	3P15A	5#14	6.2	5.7	6.2	2.2	1.8	6.1	750
Mag Tape MTU0600	3P20A	5#12	8.9	11.7	10.6	4.2	3.8	13.0	1025
Mag Tape MTU0610	3P15A	5#14	9.8	9.8	9.2	3.1	2.9	9.9	900
Card Reader	1P20A	3#12	9.2	—	—	1.1	1.0	3.4	460
Card Punch	3P15A	5#14	4.6	3.3	5.4	1.6	1.3	4.6	800
Card Reader/Punch	3P15A	5#14	7.0	8.5	8.0	2.8	2.5	8.5	800
Printer PRU1100	3P15A	5#14	6.5	7.2	6.5	2.2	1.9	6.6	1220
Printer PRU1200/1600	3P15A	5#14	7.6	8.4	7.8	3.1	2.8	9.5	1780
Document Handler Processor		various — See drawing							
Document Handler DHU08XX	3P15A	5#14	8.0	8.2	6.1	2.5	2.1	7.2	1700
Document Handler DHU16XX	2P70A	3#14	27.0	27.0	—	5.6	4.8	16.4	various
Peripheral Switch	2P15A	4#14	1.6	1.6	—	0.4	0.3	1.0	400
Board Tester	1P15A	3#14	8.0	—	—	1.0	0.9	3.0	720

* Common Entry for 8 Units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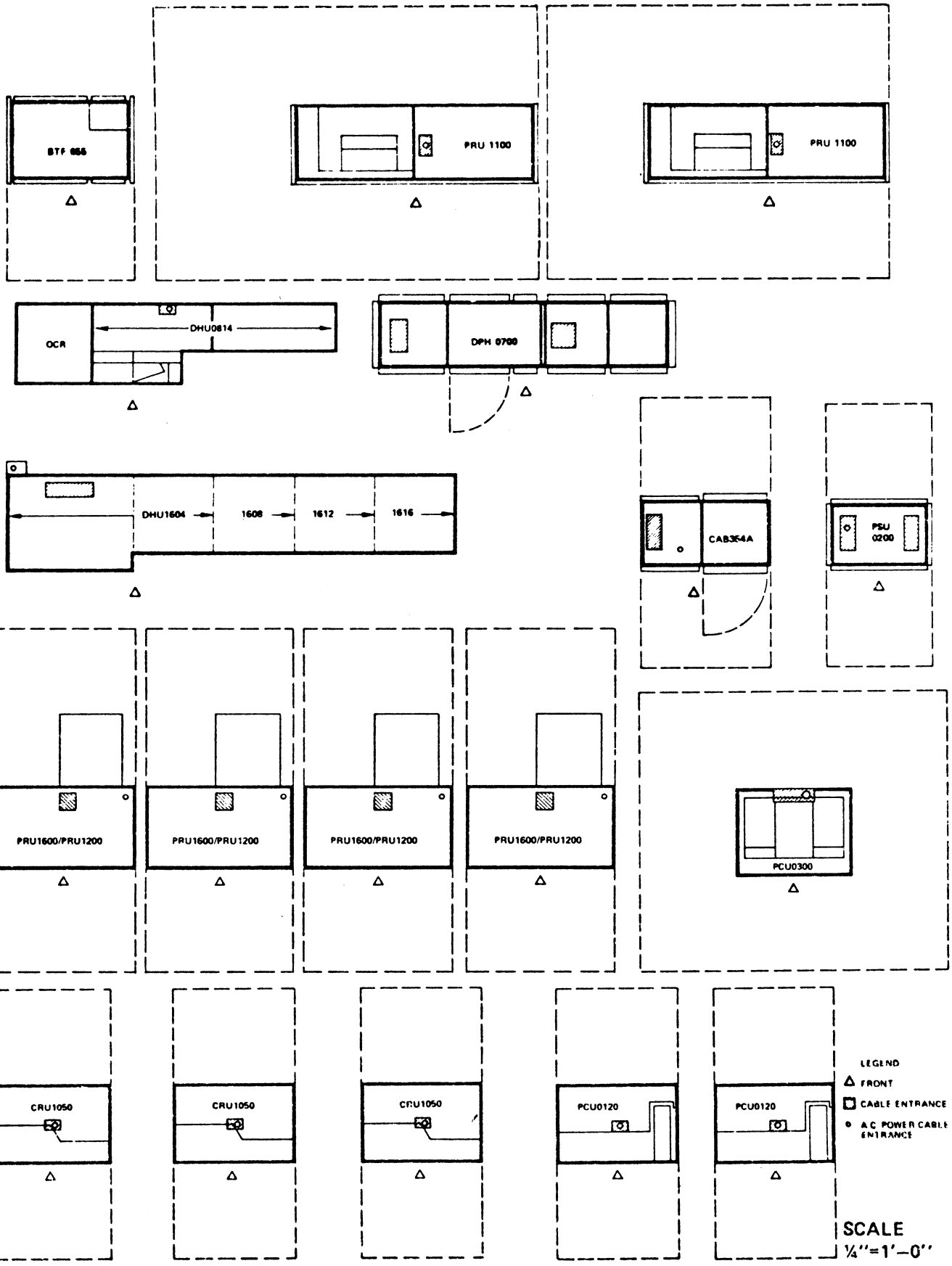
MTU 400
MTU 0500
MTU 0400
MTU6XX
7700R
LCSP
TTU1124
NPC355
CSU6001AB
CSU6002
DN 6632
DN 8624
DHU0803
DN6670
LEGEND
FRONT
CABLE ENTRANCE
A.C. POWER CABLE ENTRANCE

SCALE ¼"=1'–0"


BTF 055
PRU 1100
PRU 1100
OCR
DHU0814
DPH 0700
DHU1604
1608
1612
1616
CAB364A
PSU
0200
PRU1600/PRU1200
PRU1600/PRU1200
PRU1600/PRU1200
PRU1600/PRU1200
PCU0300
CRU1050
CRU1050
CRU1050
PCU0120
PCU0120
LEGEND
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CABLE ENTRANCE
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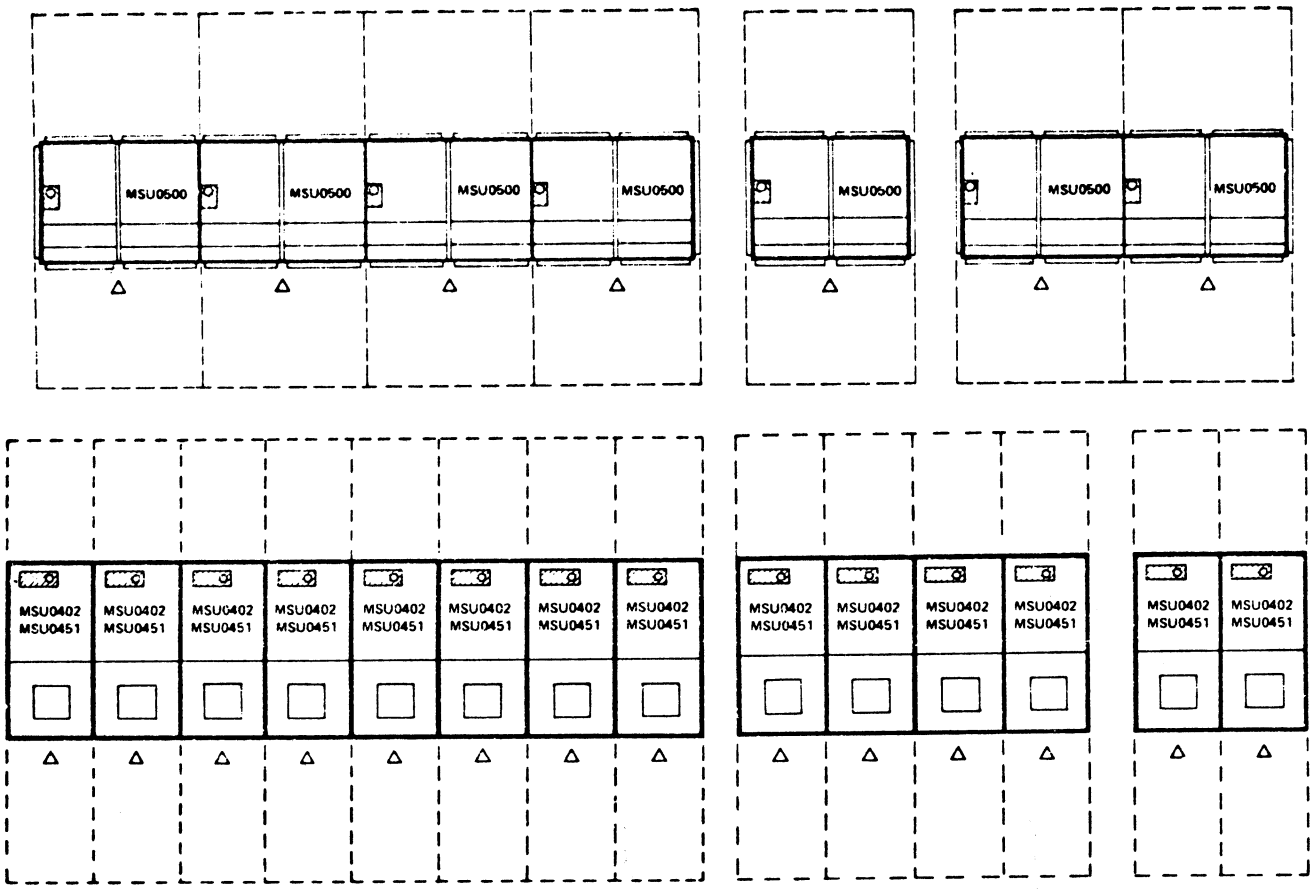
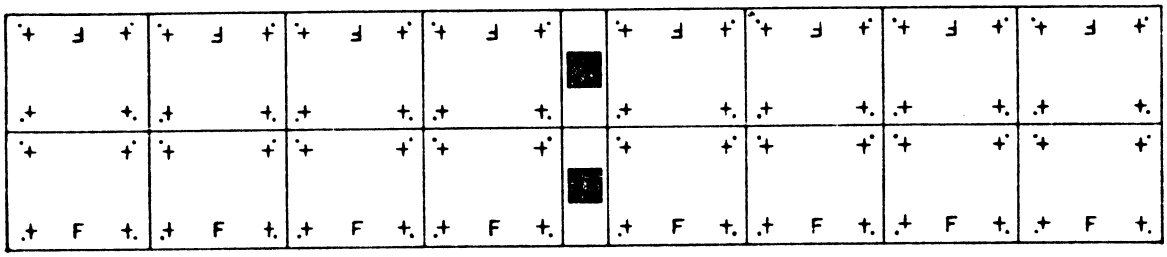
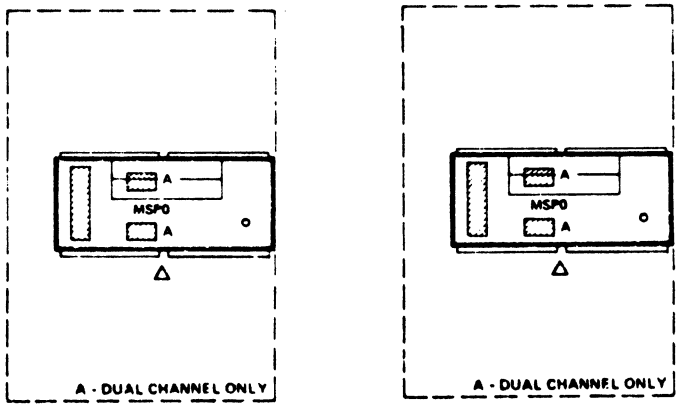
SCALE
¼"=1'–0"



MSU0400



PERIPHERAL PROCESSOR



LEGEND

△ FRONT

CABLE ENTRANCE

● A.C. POWER CABLE ENTRANCE

SCALE ¼"=1'–0"

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