

POWER DELEGATOR

SERIES 7100A POWER DISTRIBUTION UNIT

GENERAL SPECIFICATIONS

1.0 SCOPE

The following specification describes the features, design, and application of the Series 7100A Power Distribution Unit. All systems are designed and manufactured to assure maximum reliability, flexibility, serviceability and performance. The overall function of the Series 7100A is to receive electrical building power and distribute the power through flexible cable and/or receptacles to peripheral equipment and components of the data processing facility.

2.0 STANDARDS

The Power Distribution Unit will be designed and manufactured in accordance with the following standards.

- 2.1 Underwriters Laboratory or ETL listed to UL Standard 478
- 2.2 National Electric Code (NEC) current edition
- 2.3 National Electrical Manufacturers Association (NEMA)
- 2.4 Occupational Safety and Health Act (OSHA)
- 2.5 National Fire Protection Association (NFPA)
- 2.6 American National Standards Institute (ANSI)
- 2.7 Federal Information Processing Standards (FIPS)

3.0 GENERAL

The Series 7100A Power Distribution Unit provides the following:

- 3.1 Single point silver plated ground for all computer room equipment.
- 3.2 Protection from overload conditions.
- 3.3 Distribution and protection of electrical power to each computer and peripheral device.
- 3.4 Monitoring of the electrical power to the computer room.
- 3.5 Annunciate computer room status (optional).
- 3.6 Quick installation with junction box interface to building power and flexible cable and/or receptacle interface to the computer system.

4.0 MAJOR COMPONENTS

The power distribution unit as described herein consists of a high voltage junction box with flexible input cable, optional monitoring, an optional low voltage junction box with flexible input cables, lightening arrestor (optional), main circuit breaker, main output circuit breaker(s), (optional), branch circuit breakers, (optional) power monitor and alarm system (optional).

4.1 JUNCTION BOX

- 4.1.2 The junction boxes are all steel electrical enclosures for installation under the computer room raised floor.
- 4.1.3 The high voltage box contains the main power terminal block for each hot line and the service ground and neutral.
- 4.1.4 The low voltage box (when furnished) contains terminals, for low voltage control, to interface with the Remote Emergency Power Off (REPO) push button, air conditioning, water detectors, Halon, smoke and/or fire detectors, etc.
- 4.1.5 The junction box can be furnished mounted on an optional nine (9) square foot radio frequency (R.F.) suppression plate. The R.F. suppression plate will be of a highly capacitive construction consisting of two copper plates separated by a dielectric material.
- 4.1.6 An optional, quick disconnect, power plug (Main power entry) is available on most power sizes.

4.0 MAJOR COMPONENTS (continued)

4.2 MAIN INPUT POWER CABLE

4.2.1 The junction boxes and the Power Distribution Center will be interconnected by a flexible, water-proof, steel raceway, 12 feet long, having a copper shield grounding conductor wound between the raceway walls.

4.2.2 The flexible raceway will house five (5) conductors and are sized for 125% of the full load current rating.

4.2.3 One copper conductor shall be provided for each hot line, and one service ground and one neutral. A parity sized ground and isolated ground shall be used when applicable.

4.3 MAIN CIRCUIT BREAKER

4.3.1 The main input circuit breaker with a rating of no less than 125% of the full load current will be used.

4.3.2 The main circuit breaker will incorporate a low voltage shunt trip mechanism to interface with a guarded and lighted Emergency Power Off (EPO) and optional Remote Emergency Power Off (REPO) circuits.

4.3.3 The main circuit breaker is mounted vertically in the main distribution center and has an interrupting capacity of not less than 10,000 A.I.C.

5.0 INTERNAL BUS AND GROUND SYSTEM

5.1 NEUTRAL BUS

The building neutral will be connected to a bus for neutral (white) branch circuits. The neutral pad is silver plated and isolated from the ground pad.

5.2 GROUNDING SYSTEM

The service ground shall be connected to the Power Distribution Unit's chassis. The ground pad will be silver plated.

6.0 DISTRIBUTION

6.1 MAIN OUTPUT CIRCUIT BREAKERS (Optional)

- 6.1.1 Each 120/208 VAC panel board section can be protected by an optional main circuit breaker installed before the output distribution panel per the National Electric Code.
- 6.1.2 The circuit breaker is rated at not more than 125% of the full-load output current but not greater than the panel board bus rating and it is protecting. The interconnecting cables are sized in accordance with this rating.
- 6.1.3 The circuit breaker shall have a thermal-magnetic trip device and a minimum of 10,000 amperes interrupting capacity.

6.2 DISTRIBUTION PANEL

- 6.2.1 The output circuit breaker panel will be vertically mounted and easily accessible through an optional glass door or a sheet metal door.
- 6.2.2 Additional circuit breakers and flexible cables can be easily added in the field by swinging the hinged door panel away from the output breakers and inserting the circuit breakers and additional flexible output cables from the front of the Power Distribution Center.
- 6.2.3 Each distribution sub-panel will be factory wired and will have no fewer than forty two (42) single pole circuit breaker positions.
- 6.2.5 The Cabinet is capable of accepting additional 42 pole panels.
- 6.2.6 Distribution sub-panel will be capable of accepting any combination of single pole (120V) , two pole (208V, 1 phase) and three pole (208V, 3 Phase) circuit breakers with ratings up to and including 100 amperes.

6.0 DISTRIBUTION (continued)

6.3 BRANCH OUTPUT BREAKERS (Optional)

- 6.3.1 The output circuit breakers will be thermal magnetic and rated a 10,000 AIC.
- 6.3.2 The circuit breakers will have three positions to indicate if the breaker is on, off or in the tripped position.
- 6.3.3 Output circuit breakers will be manually operated and provide a switching position for each output.
- 6.3.4 Unused breaker positions will be blanked by using single pole circuit breaker filler plates.
- 6.3.5 All breakers will be clearly marked and identified with the associated output cable.

6.4 OUTPUT DISTRIBUTION CABLES

- 6.4.1 Each cable assembly will be factory assembled and tested.
- 6.4.2 Cable raceways will be, multi-wall, flexible steel conduit with a plastic waterproof jacket. A copper shielding-grounding conductor will be wound between the steel walls of the flexible conduct.
- 6.4.3 Conductors in the flexible conduit will be all copper with THHN insulation.
- 6.4.4 Each cable will contain a parity sized grounding conductor.
- 6.4.5 Cables shall have a terminal or receptacle for proper interface with each computer component.

7.0 CABINET

- 7.1 Cable and circuit breaker access will be through the front for ease of adding additional cables and circuit breakers.
- 7.2 The cabinet is furnished with casters with leveling jacks to fix the unit in position upon installation.
- 7.3 Cabinet layout is such that the input and output wiring are separated to minimize coupling between the two.
- 7.4 The cabinet is built out of at least 14 gauge steel.
- 7.5 Swinging access doors will have lift off hinges and special fasteners.
- 7.6 The cabinet has the following separate compartments to optimize safety, Isolation and serviceability.
 - 7.6.1 Breaker panel compartment.
 - 7.6.2 Control and monitor compartments.
- 7.7 Silver plated ground bus is provided.
- 7.8 Texture baked on paint finish with proper pretreatment is provided.

8.0 RESERVED