

POWER SPECIFICATIONS

SIGNA/OPTIMA/BRIVO

(REV. DATE 07.DEC.15)

VOLTAGE

PRIMARY SOURCE IS REQUIRED FOR ALL INSTALLATIONS. RANGE OF LINE VOLTAGES: NOMINAL LINE VOLTAGE OF 380 TO 480, 3 PHASE, 50 OR 60 Hz.

RECOMMENDED POWER SUPPLY: 3 PHASE SOLIDLY GROUNDED WYE WITH NEUTRAL AND GROUND (5 WIRE SYSTEM). NOTE: NEUTRAL MUST BE TERMINATED PRIOR TO OR INSIDE THE MAIN DISCONNECT PANEL AND NOT BROUGHT TO THE SYSTEMS CABINET

OPTIONAL POWER SUPPLY: 3 PHASE DELTA WITH GROUND (4 WIRE) INPUT, RECOMMENDED CORNER GROUNDED DELTA CONFIGURATION.

MAXIMUM DAILY VOLTAGE VARIATION MUST FALL WITHIN ONE OF THE RANGES IN TABLE A.

**TABLE A
ALLOWABLE
INPUT
VOLTAGES/
CURRENT
DEMAND**

| INPUT VOLTAGE (V) (±10%) | TOTAL CURRENT (A) | | | | |
|--------------------------|-------------------|-----------|--------|--------|--------------|
| | TYPE A | TYPE B | TYPE C | TYPE D | TYPE E |
| 480 | 86 | 54 | 70 | 95 | 79 |
| 415 | 92 | 60 | 76 | 101 | 85 |
| 400 | 94 | 61 | 78 | 103 | 87 |
| 380 | 96 | 64 | 80 | 105 | 89 |
| 208(50Hz/60Hz) | N/A | 122.5/126 | N/A | 142 | 147.5/151.25 |
| 200(50Hz/60Hz) | N/A | 126/130 | N/A | 146 | 151.25/155 |

OVERCURRENT PROTECTION SIZED FOR 125% CONTINUOUS CURRENT. (CALCULATIONS BASED UPON NOMINAL VOLTAGE).

**PHASE—
BALANCE.**

PHASE-TO-PHASE VOLTAGES MUST BE WITHIN 2 PERCENT OF THE LOWEST PHASE-TO-PHASE VOLTAGE. MAXIMUM ALLOWABLE TRANSIENT VOLTAGE EXCURSIONS ABOVE OR BELOW NOMINAL WAVESHAPE FORM NOT TO EXCEED 200V AT A MAXIMUM DURATION OF 1 CYCLE AND FREQUENCY OF 10 TIMES PER HOUR.

VOLTAGE TRANSIENT OR IMPULSE ON THE INCOMING POWER MUST BE HELD TO A MINIMUM. TRANSIENTS CAUSED BY LIGHTNING, SURGES, LOAD SWITCHING, STATIC ELECTRICITY ETC. CAN CAUSE SCAN ABORTS OR, IN EXTREME INSTANCES, COMPONENT FAILURE IN THE COMPUTER SUBSYSTEM.

**POWER
DEMAND**

MAXIMUM POWER DEMAND AVERAGED OVER 5 SECONDS = VARIES BY COOLING TYPE.

| SYSTEM EQUIPMENT | POWER DEMAND |
|-------------------------------------|--------------|
| PDU (IN SYSTEMS CABINET, MR2) | 30 kVA |
| MAGNET MONITOR (MM) | 0.15 kVA |
| SHIELD/CRYO COOLER COMPRESSOR (MS5) | 9 kVA |
| 11kW CHILLER (FOR EACH) | 10.9 kVA |
| WATER CHILLER FOR BRM | 4.6 kVA |

**TABLE B
MAXIMUM
POWER
DEMAND.**

| DEMAND kVa* POWER FACTOR AT | TYPE A | TYPE B | TYPE C | TYPE D | TYPE E |
|-----------------------------------|--------|--------|--------|--------|--------|
| | | 59.15 | 39.15 | 49.15 | 43.75 |
| | 0.9 | | | | |

*DEMAND INCLUDES POWER FOR ENTIRE MR SYSTEM. LINE VOLTAGE REGULATION AT MAXIMUM POWER DEMAND MUST BE LESS THAN OR EQUAL TO 2 PERCENT OR 4 PERCENT FROM POWER SOURCE.

**DISTRIBUTION
TRANSFORMER**

FOR A SINGLE UNIT INSTALLATION, THE MINIMUM TRANSFORMER SIZE IS 112.5 KVA. REGULATED TRANSFORMER IS NOT REQUIRED UNLESS VOLTAGE CHANGES EXCEED ±10% OVER A PERIOD OF 1 HOUR OR LONGER.

REFER TO DIRECTION LISTED ON C1 FOR ADDITIONAL INFORMATION.



FEEDER TABLE

FEEDER TABLE – TYPE A

- CALCULATIONS BASED UPON NOMINAL VOLTAGE, WIRE SIZE IN AWG.
- RECOMMENDED FEEDER SIZES FROM DIST. TRANS. TO MDP, ALL CALCULATIONS BASED UPON A 20 FT. [6.1m] RUN FROM MDP TO PD USING NO.2 AWG [35 SQ mm].
- THE GROUNDING CONDUCTOR () SHALL BE COPPER AND WILL RUN IN THE SAME CONDUIT AS THE FEEDERS FROM EQUIPMENT BACK TO THE ROOM POWER SOURCE GROUNDING POINT.
- IF THE GENERAL ELECTRIC EQUIPMENT IS BEING FED BY A DELTA SECONDARY, IT IS RECOMMENDED THAT THE B PHASE ON THE SECONDARY BE CONNECTED TO GROUND TO PREVENT DAMAGE TO THE SYSTEM.
- NEUTRAL MUST BE TERMINATED PRIOR TO OR INSIDE THE MAIN DISCONNECT PANEL AND NOT BROUGHT INTO THE POWER DISTRIBUTION UNIT.
- **FOR A FULL SYSTEM UPS REFER TO ELECTRICAL DETAILS FOR UPS FEEDER WIRES.**
- THE MAXIMUM POWER DEMAND FOR THE OUTDOOR MRCC WAS USED FOR THESE CALCULATIONS. IF SO DESIRED THE CUSTOMERS CONTRACTOR CAN DETERMINE EXACT SIZES BASED UPON MAXIMUM DEMAND FOR THE COOLING SYSTEM TO BE INSTALLED FROM THE TABLE IN POWER SPECIFICATIONS.
- * MINIMUM WIRE SIZE FOR CIRCUIT BREAKER, BASED ON RECOMMENDED OVERCURRENT PROTECTION

| RUN LENGTH IN FEET | POWER SUPPLY VOLTAGE | | | | | | | |
|-----------------------|----------------------|--------|----------------|--------|----------------|--------|----------------|--------|
| | 342-418 380 | | 360-440 400 | | 374-456 415 | | 432-528 480 | |
| | FEEDER | GROUND | FEEDER | GROUND | FEEDER | GROUND | FEEDER | GROUND |
| 100 | * 1/0 | 6 | * 1/0 | 6 | * 1/0 | 6 | * 1/0 | 6 |
| 150 | * 1/0 | 6 | * 1/0 | 6 | * 1/0 | 6 | * 1/0 | 6 |
| 200 | * 1/0 | 6 | * 1/0 | 6 | * 1/0 | 6 | * 1/0 | 6 |
| 250 | * 1/0 | 6 | * 1/0 | 6 | * 1/0 | 6 | * 1/0 | 6 |
| 300 | 2/0 | 4 | 1/0 | 6 | * 1/0 | 6 | * 1/0 | 6 |
| 350 | 3/0 | 4 | 2/0 | 4 | 1/0 | 6 | * 1/0 | 6 |
| 400 | 3/0 | 4 | 2/0 | 4 | 2/0 | 4 | * 1/0 | 6 |
| 450 | 4/0 | 2 | 3/0 | 4 | 2/0 | 4 | 1/0 | 6 |

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