

# POWER SPECIFICATIONS

## SIGNA TWINSPEED

(REV. DATE 06/16/09)

**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: WYE-CONNECTED OR DELTA-CONNECTED (GROUNDED DELTA).  
 MAXIMUM DAILY VOLTAGE VARIATION MUST FALL WITHIN ONE OF THE RANGES IN TABLE A.

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

NOMINAL VOLTAGE	ABSOLUTE RANGE	CURRENT (AMPS)		MINIMUM STANDARD OVERCURRENT PROTECTION **
		MAX MOMENTARY	CONTINUOUS	
380	342-418	143	113	150-A
400	360-440	136	107	150-A
415	374-456	131	103	150-A
<b>480</b>	<b>432-528</b>	<b>114</b>	<b>89</b>	<b>150-A</b>

\*\* 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 WAVESHAPES 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 = 90.5 KVA. 90.5 KVA CONSISTING OF 61.2 KVA FOR PDU + 15.8 KVA (CONTINUOUS OPERATION) FOR MRCC + 9 KVA (CONTINUOUS OPERATION) FOR SHIELD/CRYO COOLER + 4.5 KVA FOR MAGNET MONITOR EQUIPMENT.

**TABLE B  
MAXIMUM  
POWER  
DEMAND.**

DEMAND	SIGNA TWINSPEED
kVa *	94.3
POWER FACTOR AT	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 150 KVA. REGULATED TRANSFORMER IS NOT REQUIRED UNLESS VOLTAGE CHANGES EXCEED ±10% OVER A PERIOD OF 1 HOUR OR LONGER.

**NOTE:**

THE MAXIMUM POWER DEMAND FOR THE OUTDOOR MRCC/GWHX WAS USED FOR THESE CALCULATIONS. IF SO DESIRED THE CUSTOMERS CONTRACTOR CAN DETERMINE EXACT WIRE SIZES BASED UPON MAXIMUM DEMAND FOR THE COOLING SYSTEM TO BE INSTALLED FROM THE TABLE BELOW.

CONFIGURATION	TOTAL DEMAND	COOLING SYSTEM
2 MRCC UNITS	94.3 kVA	15.8 kVA
1 MRCC UNIT	86.4 kVA	7.9 kVA
1 GWHX UNIT	78.5 kVA	0 kVA

REFER TO DIRECTION LISTED ON C1 FOR ADDITIONAL INFORMATION.



## FEEDER TABLE

### FEEDER TABLE – SIGNA TWINSPEED

- o CALCULATIONS BASED UPON NOMINAL VOLTAGE, WIRE SIZE IN AWG.
- o 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].
- o THE GROUNDING CONDUCTOR WILL BE THE SAME SIZE AS THE POWER FEEDER AND SHALL BE COPPER AND WILL RUN IN THE SAME CONDUIT AS THE FEEDERS FROM EQUIPMENT BACK TO THE ROOM POWER SOURCE GROUNDING POINT.
- o 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.
- o NEUTRAL MUST BE TERMINATED PRIOR TO OR INSIDE THE MAIN DISCONNECT PANEL AND NOT BROUGHT INTO THE ACGD/PDU CABINET.
- o **FOR A FULL SYSTEM UPS REFER TO ELECTRICAL DETAILS FOR UPS FEEDER WIRES.**
- o 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.

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	<b>1/0</b>	<b>6</b>
150	1/0	6	1/0	6	1/0	6	<b>1/0</b>	<b>6</b>
200	1/0	6	1/0	6	1/0	6	<b>1/0</b>	<b>6</b>
250	2/0	4	2/0	4	2/0	4	<b>1/0</b>	<b>6</b>
300	3/0	4	3/0	4	3/0	4	<b>2/0</b>	<b>4</b>
350	4/0	2	4/0	2	4/0	2	<b>3/0</b>	<b>4</b>
400	300M	2	250M	2	250M	2	<b>4/0</b>	<b>2</b>
450	300M	2	300M	2	300M	2	<b>4/0</b>	<b>2</b>

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