

VARIABLE SPEED DRIVE SIZING CHECKLIST

JOB:				PART NUMBER:			
CUSTOMER NAME:							
CUSTOMER ADDRESS:				DATE:			
				APPLICATION:			
				PO #:			
CONTACT NAME:				PREPARED BY:			
STANDARD FEATURES / CAPABILITIES							
ENCLOSURE RATING				INDOOR			
				OUTDOOR			
☐ IP20 CHASSIS		☐ TYPE 1		☐ TYPE 12		☐ TYPE 3R	
						☐ TYPE 4X	
SYSTEM CONTROL							
		☐ Pressure		☐ Speed		☐ Level	
						☐ Flow	
INPUT/OUTPUT OPTIONS - QUANTITY REQUIRED							
ANALOG INPUT		DIGITAL INPUT		ANALOG OUTPUT		DIGITAL OUTPUT	
						RELAY OUTPUT	
BMS PROTOCOL							
☐ MODBUS RTU		☐ BACNET MSTP		☐ PROFIBUS		☐ DEVICENET	
☐ NOT REQUIRED						Specify Protocol (OTHER):	
SITE SPECIFIC DATA:							
MEASURED LINE TO LINE VOLTAGE		*V (Average)		**V (IMBALANCE) %		MEASURED LINE TO GROUND VOLTAGE	
L1 - L2						L1 - Ground	
L2 - L3						L2 - Ground	
L1 - L3						L3 - Ground	
VOLTAGE CALCULATIONS:							
$* V (\text{Average}) = \frac{(V_{L1-L2} + V_{L1-L3} + V_{L2-L3})}{3}$							
$** V (\text{Imbalance}) = \left(\frac{\text{Reading with maximum deviation from Vavg}}{Vavg} \right) - 1 \times 100$							
MOTOR INFORMATION:							
SPECIFIED INPUT PHASE/VOLTAGE		NOMINAL MOTOR HP:					
☐ 1PH / 208 - 230 V		☐ < 0.75		☐ 7.5		☐ 40	
☐ 3PH / 208 - 230 V		☐ 1		☐ 10		☐ 50	
☐ 1PH / 380 - 460 V		☐ 1.5		☐ 15		☐ 60	
☐ 3PH / 380 - 460 V		☐ 2		☐ 20		☐ 75	
☐ 3PH / 575 V		☐ 3		☐ 25		☐ 100	
☐ 1PH / 115 V		☐ 5		☐ 30		☐ 125	
MOTOR AMPERAGE (SFA / FLA)		/		AMBIENT TEMPERATURE			
LOAD WIRE LENGTH							
☐ < 50 Feet		☐ 300 Feet Max.		☐ 1000 Feet Max.		☐ ≤ 1500 Feet	
						☐ > 1500 Feet	
MOTOR PROTECTION - Over 50 feet will require a reactor or filter to protect the motor.							
☐ No Filter		☐ Load Reactor		☐ DV/DT Filter		☐ Sine Wave Filter	

This information is subject to change. Consult factory as required. Not to be used for construction purposes.

CONTROLS TECHNICAL HOTLINE: 866-325-4210

The type of transformer and the connection configuration feeding a drive plays an important role in its performance and safety. The following is a brief description of some of the more common configurations and a discussion of their virtues and shortcomings. Always ask what type of power system the site has before sizing the drive.

ELECTRICAL POWER SUPPLY VARIATIONS					
Nominal Voltage	V Phase to Gnd			Type of Transformer	NOTES
	L1 to Gnd	L2 to Gnd	L3 to Gnd		
208V	120V			Wye	Most common. Provides rebalancing of unbalanced voltage with a 30° phase shift.
480V	277V				
575V	332V				
240V	Various			Floating Delta	The phases have no true reference to ground
480V					
575V					
240V	0V	240V	240V	Corner Ground Delta	One phase connected to ground. Other 2 phases = line voltage
480V	0V	480V	480V		
240V	208V	120V	120V	Delta with Wild Leg	One phase center tapped to derive a different voltage
480V	415V	240V	240V		
ALL 3 PHASE	Look for 2 xformer cans on the power pole!			Open Delta	Generating 3 phase power from just 2 phases of a transformer
DRIVE MODIFICATIONS BASED UPON POWER SUPPLY					
Wye	SPD	Check Line to Ground voltages are within imbalance (3%).			
	IPC	Check Line to Ground voltages are within imbalance (3%).			
Floating Delta	SPD	Follow procedure: Disconnecting EMC Filter and MOV's per IM213.			
	IPC	Set Parameter 14-50 RFI FILTER to [Off].			
Corner Grounded Delta	SPD	Follow procedure: Disconnecting EMC Filter and MOV's per IM213.			
	IPC	Set Parameter 14-50 RFI FILTER to [Off].			
Delta with Wild Leg	SPD	Follow procedure: Disconnecting EMC Filter and MOV's per IM213.			
	IPC	Set Parameter 14-50 RFI FILTER to [Off].			
Open Delta	SPD	Use a derated (oversized) three phase drive wired for single phase input supply. Drive output amperage to be derated by 50% to accommodate the single phase input.			
	IPC	Use dedicated single phase drive wired with the balanced input legs.			

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