Variable Frequency Drive (VFD) Installation Instructions

Input AC Power

1. Circuit breakers feeding the VFDs are recommended to be thermal-magnetic and fast acting. They should be sized as 1.5 times the input amperage of the drive. Refer to the table below.
2. Each VFD should be fed by its own breaker. If multiple VFDs are to be combined on the same breaker, each drive should have its own protection measure (fuses or miniature circuit breaker) downstream from the breaker.
3. Input AC line wires should be run in conduit from the breaker panel to the drives. AC input power to multiple VFDs can be run in a single conduit if needed.
4. The VFD should be grounded on the terminal marked PE.

STOP!
DO NOT connect incoming AC power to output terminals T1, T2, T3. Severe damage to the drive will result.

Output Power

1. Motor wires from each VFD to its respective motor MUST be run in a separate steel conduit away from control wiring and incoming AC power wiring to avoid noise and crosstalk between drives.
2. If the distance between the VFD and the motor exceeds 300 FT, an output reactor should be used between the VFD and the motor. The output reactor should be sized accordingly.
3. If the distance between the VFD and the motor is between 500 and 1000 FT, a dV/dT filter should be used.
4. No contactor should be installed between the drive and the motor. Operating such a device while the drive is running can potentially cause damage to the power components of the drive.
5. When a disconnect switch is installed between the drive and motor, it should only be operated when the drive is in a STOP state.

Programming

1. The Drive should be programmed for the proper motor voltage. P107 is set to 0 (Low) if motor voltage is 120 VAC, 208 VAC or 400 VAC. P107 is set to 1 (High) if motor voltage is 230 VAC, 480 VAC or 575 VAC.
2. The Drive should be programmed for the proper motor overload value.
   P108 is calculated as Motor FLA x 100 / Drive Output Rating (available in table below).

   To enter the PROGRAM mode to access the parameters:
1. Press the Mode (M) button. This will activate the password prompt (PASS).
2. Use the Up and Down buttons to scroll to the password value (the factory default password is “0225”) and press the Mode (M) button. Once the correct password is entered, the display will read “P100”, which indicates that the PROGRAM mode has been accessed at the beginning of the parameter menu.
3. Use the Up and Down buttons to scroll to the desired parameter number..
4. Once the desired parameter is found, press the Mode (M) button to display the present parameter setting. The parameter value will begin blinking, indicating that the present parameter setting is being displayed. The value of the parameter can be changed by using the Up and Down buttons.
5. Pressing the Mode (M) button will store the new setting and also exit the PROGRAM mode. To change another parameter, press the Mode (M) button again to re-enter the PROGRAM mode. If the Mode button is pressed within 1 minute of exiting the PROGRAM mode, the password is not required to access the parameters. After one minute, the password must be re-entered in order to access the parameters again.

   P500 parameter provides a history of the last 8 faults on the drive. It can be accessed without getting into PROGRAM mode.

ACTECH SMV VFD CROSS-REFERENCE TABLE

M/N	Volts	1Ø input	3Ø input	HP	Input Amps 1Ø 120VAC	Input Amps 1Ø 240VAC	Output Amps	KVA	Breaker 1Ø 120VAC	Breaker 1Ø 240VAC
ESV251N01SXB531	120/ 240V	X		0.33	6.8	3.4	1.7	0.816	15	15
ESV371N01SXB531	120/ 240V	X		0.5	9.2	4.6	2.4	1.104	15	15
ESV751N01SXB531	120/ 240V	X		1	16.6	8.3	4.2	1.992	25	15
ESV112N01SXB531	120/ 240V	X		1.5	20	10	6	2.4	30	20
					Input Amps 1Ø	input Amps 3Ø			Breaker 1Ø	Breaker 3Ø
ESV371N02YXB531	240V	X	X	0.5	5.1	2.9	2.4	1.20	15	15
ESV751N02YXB531	240V	X	X	1	8.8	5	4.2	2.08	15	15
ESV112N02YXB531	240V	X	X	1.5	12	6.9	6	2.86	20	15
ESV152N02YXB531	240V	X	X	2	13.3	8.1	7	3.36	25	15
ESV222N02YXB531	240V	X	X	3	17.1	10.8	9.6	4.48	30	20
ESV402N02TXB531	240V		X	5		18.6	16.5	7.72		30
ESV552N02TXB531	240V		X	7.5		26	23	10.80		40
ESV752N02TXB531	240V		X	10		33	29	13.70		50
ESV113N02TXB531	240V		X	15		48	42	19.93		80
ESV153N02TXB531	240V		X	20		59	54	24.50		90
ESV751N04TXB531	480V		X	1		2.5	2.1	2.08		15
ESV112N04TXB531	480V		X	1.5		3.6	3	2.99		15
ESV152N04TXB531	480V		X	2		4.1	3.5	3.40		15
ESV222N04TXB531	480V		X	3		5.4	4.8	4.48		15
ESV402N04TXB531	480V		X	5		9.3	8.2	7.72		15
ESV552N04TXB531	480V		X	7.5		12.4	11	10.30		20
ESV752N04TXB531	480V		X	10		15.8	14	13.12		25
ESV113N04TXB531	480V		X	15		24	21	19.93		40
ESV153N04TXB531	480V		X	20		31	27	25.74		50
ESV183N04TXB531	480V		X	25		38	34	31.56		60
ESV223N04TXB531	480V		X	30		45	40	37.37		70
ESV751N06TXB531	600V		X	1		2	1.7	2.08		15
ESV152N06TXB531	600V		X	2		3.2	2.7	3.32		15
ESV222N06TXB531	600V		X	3		4.4	3.9	4.57		15
ESV402N06TXB531	600V		X	5		6.8	6.1	7.06		15
ESV552N06TXB531	600V		X	7.5		10.2	9	10.59		20
ESV752N06TXB531	600V		X	10		12.4	11	12.87		20
ESV113N06TXB531	600V		X	15		19.7	17	20.45		30
ESV153N06TXB531	600V		X	20		25	22	25.95		40
ESV183N06TXB531	600V		X	25		31	27	32.18		50
ESV223N06TXB531	600V		X	30		36	32	37.37		60