SIEMENS

Installation Instructions
Document No. 129-374
August 1, 2006

SED2 Variable Frequency Drives Conventional Bypass (C-Bypass) Options

Product Description

The SED2 Conventional Bypass (C-Bypass) Options are companion packages for the family of SED2 Variable Frequency Drives (VFDs).

Contents

The SED2 C-Bypass Option consists of a SED2 VFD and a bypass enclosure which includes

- Step-down power transformer
- Contactors
  - Bypass
  - Output
  - Input (Optional)
- Overload (current) relay
- Reactor (optional)
- Disconnect switch (or optional circuit breaker)
- Fuses (optional)

Warning/Caution Notations

WARNING:		Personal injury/loss of life may occur if you do not follow the procedures as specified.
CAUTION:		Equipment damage, or loss of data may occur if you do not follow the procedures as specified.

Expected Installation Time

45 minutes

Product Numbers

Your Part Number	V	B	A				.					X		
Example Part Number	V	B	A	4	4	0	.	D	1	2	0	X		

Model(s)	
VB	Vfd with Bypass
VV	Vfd Variant
BY	BYpass only
Series	
A	Conventional Bypass (Standard)
Voltage	
1	208 V
2	230 to 240 V
3	380 to 480 V
4	500 to 600 V
HP rating	
0.5, 0.7, 1.0, 1.5, 2.0, 3.0, 4.0, 5.0, 7.5, 10.,15.,20.,25.,30.,40.,50.,60.,75.,100,125	
Disconnect	
D	Disconnect
F	Fused Disconnect
B	Circuit Breaker
NEMA rating	
1	NEMA type 1
5	NEMA type 12
Contactor	
0	None
2	2 Contactors
3	3 Contactors
Reactor	
0	None
3	Line Reactor
L	Load Reactor
Filter	
X	(Factory Required Designator)
Options	
_ _ _	standard variant number
HA1	High Amp rating
HT1	High Temperature rating (NEMA 3R only)
M_ _	Multiple motor control
CMS	Contactor Motor Selection

Prerequisites

Mounting clearance:
Leave six-inches (154 mm) of space at top and bottom for equipment access. If fitted with a protective shield, allow 12 inches (305 mm) of space between the sides of each VFD to allow for sufficient heat dissipation.

CAUTION:

If installing a SED2 VFD after prolonged storage, see the *Startup, Operation and Maintenance Manual* for Mechanical Installation procedures. (Document Number 125-3201).

Installation

CAUTION:

Height above sea level:
If installing a SED2 VFD at an altitude of higher than 3,280 ft (1000 m), underrating is required.

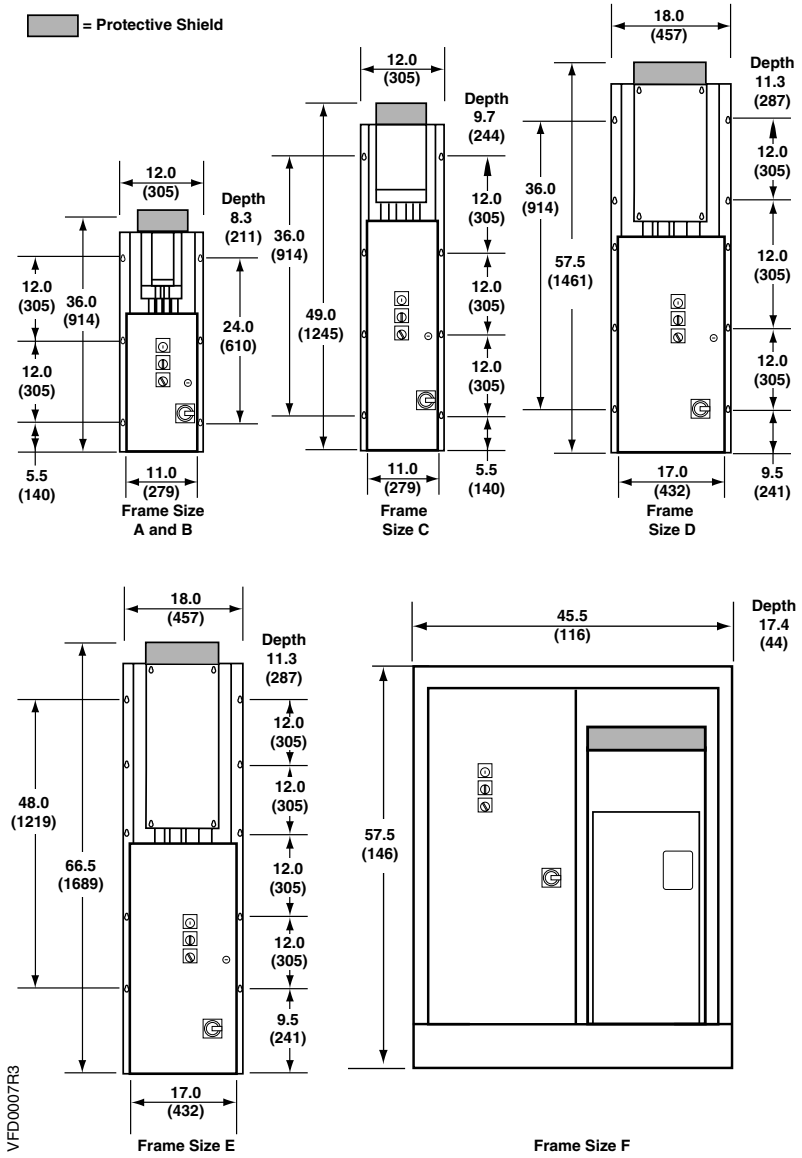


Figure 1. Mounting and Overall Dimensions in Inches (Centimeters).

Table 1. Approximate Weights

Frame Size	Wt. lb (kg)
A	55 (25)
B	65 (29)
C	100 (45)
D	170 (77)
E	200 (91)
F	500 (227)

NOTE: Actual weight will be affected by actual horsepower/voltage and selected power options.

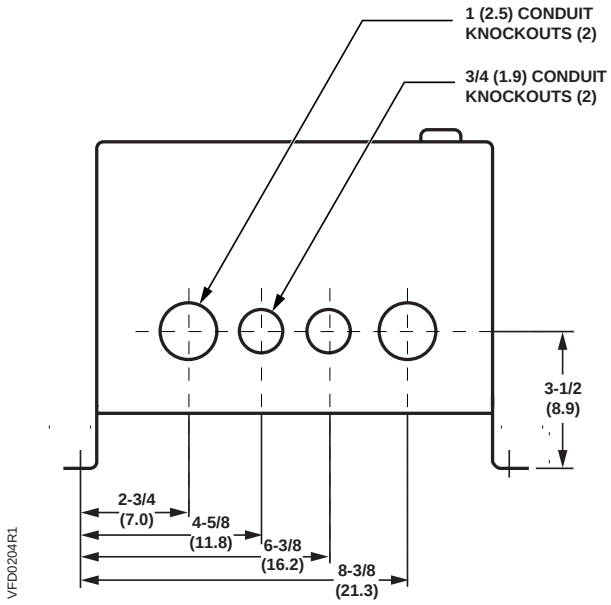


Figure 2. Frame Sizes A and B Conduit Locations. Viewed from Bottom; Dimensions in Inches (Centimeters).

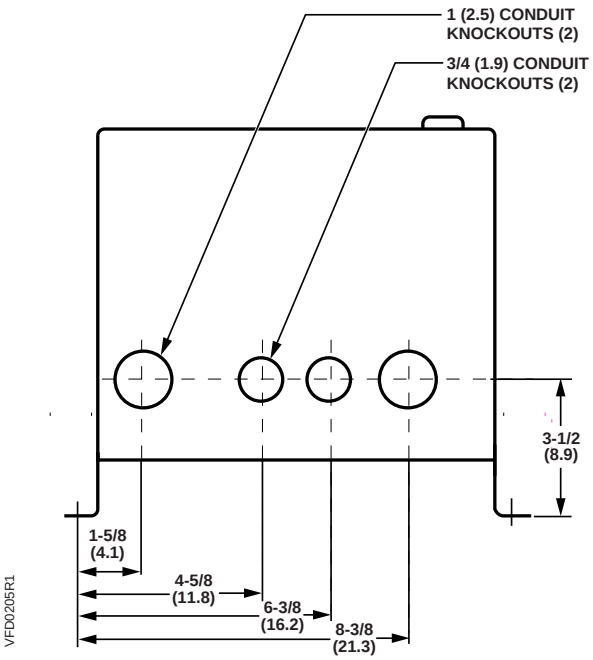


Figure 3. Frame Size C Conduit Locations. Viewed from Bottom; Dimensions in Inches (Centimeters).

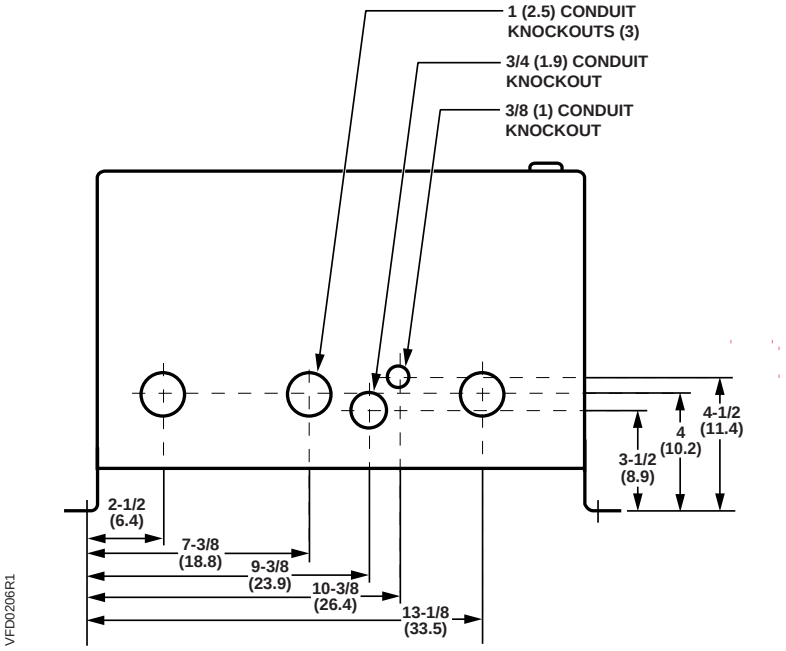


Figure 4. Frame Sizes D and E Conduit Locations. Viewed from Bottom; Dimensions in Inches (Centimeters).

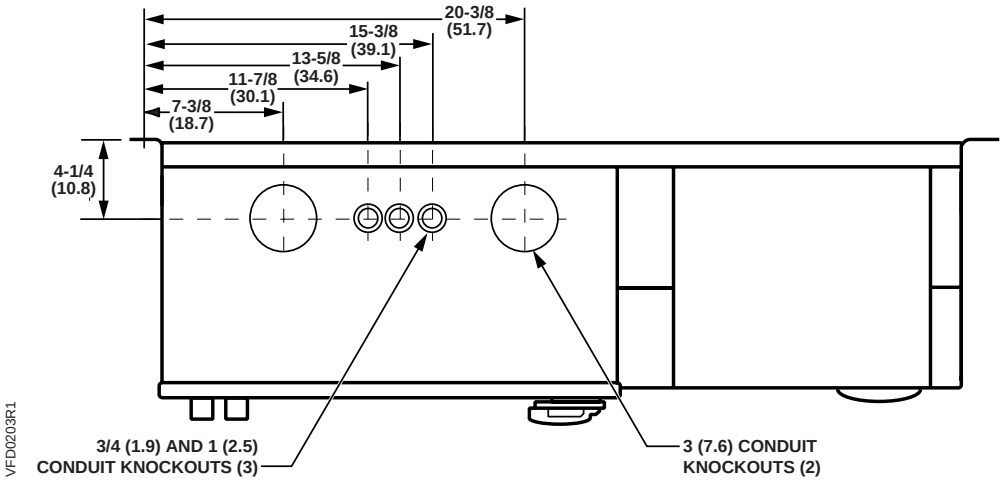


Figure 5. Frame Size F Conduit Locations. Viewed from Top; Dimensions in Inches (Centimeters).

Wiring

Wire Sizes and Tightening Torques

Table 2. Wire Sizes and Tightening Torques for Conventional Bypass System with 208V Drive.

Part Number	Bypass Frame Size	HP	kW	Amps	Circuit Breaker		Disconnect Switch		Overload				Ground Lug	
					Wire Size *	Torque, lb-in (Nm)	Wire Size *	Torque, lb-in (Nm)	Wire Size *	Torque, lb-in (Nm)	Range, Amps	Max Backup Fuse, Amps	Wire Size *	Torque, lb-in (Nm)
VBA10.5----	A	0.5	0.37	2.3	14-10 Cu	32 (3.6)	18-10	13 - 17 (1.5 - 1.7)	18-14	7 - 10.3 (8 - 1.2)	1.8 - 2.5	10	14-2	35 (4)
VBA10.7----	A	0.7	0.55	3.0	14-10 Cu	32 (3.6)	18-10	13 - 17 (1.5 - 1.7)	18-14	7 - 10.3 (8 - 1.2)	2.2 - 3.2	12	14-2	35 (4)
VBA11.0----	A	1.0	0.75	3.9	14-10 Cu	32 (3.6)	18-10	13 - 17 (1.5 - 1.7)	18-14	7 - 10.3 (8 - 1.2)	2.8 - 4	16	14-2	35 (4)
VBA11.5----	B	1.5	1.1	5.5	14-10 Cu	32 (3.6)	18-10	13 - (1.5 - 1.7)	18-14	7 - 10.3 (8 - 1.2)	4.5 - 6.3	25	14-2	35 (4)
VBA12.0----	B	2.0	1.5	7.4	14-10 Cu	32 (3.6)	18-10	13 - (1.5 - 1.7)	18-14	7 - 10.3 (8 - 1.2)	5.5 - 8.0	30	14-2	35 (4)
VBA13.0----	B	3.0	2.2	10.4	14-10 Cu	32 (3.6)	18-10	13 - 17 (1.5 - 1.7)	18-14	7 - 10.3 (8 - 1.2)	7 - 10	40	14-2	35 (4)
VBA15.0----	C	5.0	4.0	16.7	14-10 Cu	32 (3.6)	14-8	17 - 22 (1.9 - 2.5)	14-10	18 - 22 (2 - 25)	14 - 20	80	14-2	35 (4)
VBA17.5----	C	7.5	5.5	22.0	14-10 Cu	20 - 60 (2.2 - 6.8)	14-8	17 - 22 (1.9 - 2.5)	14-10	18 - 22 (2 - 25)	20 - 25	100	14-2	35 (4)
VBA110.----	C	10	7.5	28	10-1/0 Cu	20 - 60 (2.2 - 6.8)	14-8	17 - 22 (1.9 - 2.5)	18-3	27 - 40 (3.1 - 4.5)	22 - 32	125	14-2	35 (4)
VBA115.----	D	15	11.0	42	10-1/0 Cu	20 - 60 (2.2 - 6.8)	14-6	22 - 27 (2.5 - 3.1)	18-3	27 - 40 (3.1 - 4.5)	40 - 50	200	14-2	35 (4)
VBA120.----	D	20	15.0	54	10-1/0 Cu	20 - 60 (2.2 - 6.8)	12-1	22 - 27 (2.5 - 3.1)	10-1/0	36 - 53 (4.1 - 6)	45 - 63	250	14-2	35 (4)
VBA125.----	D	25	18.5	68	3-3/0-3 Cu	80 (9)	12-1	22 - 27 (2.5 - 3.1)	10-1/0	36 - 53 (4.1 - 6)	57 - 75	300	14-2	35 (4)
VBA130.----	E	30	22.0	80	3-3/0-3 Cu	80 (9)	12-1	22 - 27 (2.5 - 3.1)	10-1/0	36 - 53 (4.1 - 6)	70 - 90	350	14-2	35 (4)
VBA140.----	F	40	30.0	104	6 - 350 kcmil Cu	120 - 275 (14 - 31.1)	12-1	22 - 27 (2.5 - 3.1)	6-3/0	124 - 210 (14 - 23.7)	50 - 200	800	14-2/0	50 (5.6)
VBA150.----	F	50	37.0	130	6 - 350 kcmil Cu	120 - 275 (14 - 31.1)	6 - 350 kcmil	120 - 275 (13.5 - 31.1)	6-3/0	124 - 210 (14 - 23.7)	50 - 200	800	14-2/0	50 (5.6)
VBA160.----	F	60	45.0	154	6 - 350 kcmil Cu	120 - 275 (14 - 31.1)	6 - 350 kcmil	120 - 275 (13.5 - 31.1)	6-3/0	124 - 210 (14 - 23.7)	50 - 200	800	14-2/0	50 (5.6)

***** Wire Size in AWG unless noted otherwise. Use Copper (Cu) wire that is rated 167°F (75°C) minimum, 600 Vac.

Table 3. Wire Sizes and Tightening Torques for Conventional Bypass System with 230V to 240V Drive.

Part Number	Bypass Frame Size	HP	kW	Amps	Circuit Breaker		Disconnect Switch		Overload				Ground Lug	
					Wire Size *	Torque, lb-in (Nm)	Wire Size *	Torque, lb-in (Nm)	Wire Size *	Torque, lb-in (Nm)	Range, Amps	Max Backup Fuse, Amps	Wire Size *	Torque, lb-in (Nm)
VBA20.5---	A	0.5	0.37	2.2	14-10 Cu	32 (3.6)	18-10	13 - (1.5 - 1.7)	18-14	7 - 10.3 (8 - 1.2)	1.8 - 2.5	10	14-2	35 (4)
VBA20.7---	A	0.7	0.55	3.0	14-10 Cu	32 (3.6)	18-10	13 - (1.5 - 1.7)	18-14	7 - 10.3 (8 - 1.2)	2.2 - 3.2	12	14-2	35 (4)
VBA21.0---	A	1.0	0.75	3.9	14-10 Cu	32 (3.6)	18-10	13 - (1.5 - 1.7)	18-14	7 - 10.3 (8 - 1.2)	2.8 - 4	16	14-2	35 (4)
VBA21.5---	B	1.5	1.1	5.5	14-10 Cu	32 (3.6)	18-10	13 - (1.5 - 1.7)	18-14	7 - 10.3 (8 - 1.2)	4.5 - 6.3	25	14-2	35 (4)
VBA22.0---	B	2.0	1.5	6.8	14-10 Cu	32 (3.6)	18-10	13 - (1.5 - 1.7)	18-14	7 - 10.3 (8 - 1.2)	5.5 - 8.0	30	14-2	35 (4)
VBA23.0---	B	3.0	2.2	9.6	14-10 Cu	32 (3.6)	18-10	13 - (1.5 - 1.7)	18-14	7 - 10.3 (8 - 1.2)	7 - 10	40	14-2	35 (4)
VBA25.0---	C	5.0	4.0	15.2	14-10 Cu	32 (3.6)	14-8	17 - 22 (1.9 - 2.5)	14-10	18 - 22 (2 - 25)	14 - 20	80	14-2	35 (4)
VBA27.5---	C	7.5	5.5	22	14-10 Cu	20 - 60 (2.2 - 6.8)	14-8	17 - 22 (1.9 - 2.5)	14-10	18 - 22 (2 - 25)	20 - 25	100	14-2	35 (4)
VBA210----	C	10	7.5	28	10-1/0 Cu	20 - 60 (2.2 - 6.8)	14-8	17 - 22 (1.9 - 2.5)	18-3	27 - 40 (3.1 - 4.5)	22 - 32	125	14-2	35 (4)
VBA215----	D	15	11.0	42	10-1/0 Cu	20 - 60 (2.2 - 6.8)	14-6	22 - 27 (2.5 - 3.1)	18-3	27 - 40 (3.1 - 4.5)	40 - 50	200	14-2	35 (4)
VBA220----	D	20	15.0	54	10-1/0 Cu	20 - 60 (2.2 - 6.8)	12-1	22 - 27 (2.5 - 3.1)	10-1/0	36 - 53 (4.1 - 6)	45 - 63	250	14-2	35 (4)
VBA225----	D	25	18.5	68	3-3/0-3 Cu	80 (9)	12-1	22 - 27 (2.5 - 3.1)	10-1/0	36 - 53 (4.1 - 6)	57 - 75	300	14-2	35 (4)
VBA230----	E	30	22.0	80	3-3/0-3 Cu	80 (9)	12-1	22 - 27 (2.5 - 3.1)	10-1/0	36 - 53 (4.1 - 6)	70 - 90	350	14-2	35 (4)
VBA240----	F	40	30.0	104	6 - 350 kcmil Cu	120 - 275 (14 - 31.1)	12-1	22 - 27 (2.5 - 3.1)	6-3/0	124 - 210 (14 - 23.7)	50 - 200	800	14-2/0	50 (5.6)
VBA250----	F	50	37.0	130	6 - 350 kcmil Cu	120 - 275 (14 - 31.1)	6 - 350 kcmil	120 - 275 (13.5 - 31.1)	6-3/0	124 - 210 (14 - 23.7)	50 - 200	800	14-2/0	50 (5.6)
VBA260----	F	60	45.0	154	6 - 350 kcmil Cu	120 - 275 (14 - 31.1)	6 - 350 kcmil	120 - 275 (13.5 - 31.1)	6-3/0	124 - 210 (14 - 23.7)	50 - 200	800	14-2/0	50 (5.6)

* Wire Size in AWG unless noted otherwise. Use Copper (Cu) wire that is rated 167°F (75°C) minimum, 600 Vac.

Table 4. Wire Sizes and Tightening Torques for Conventional Bypass System with 380V to 480V Drive.

Part Number	Bypass Frame Size	HP	kW	Amps	Circuit Breaker		Disconnect Switch		Overload				Ground Lug	
					Wire Size *	Torque, lb-in (Nm)	Wire Size *	Torque, lb-in (Nm)	Wire Size *	Torque, lb-in (Nm)	Range, Amps	Max Backup Fuse, Amps	Wire Size *	Torque, lb-in (Nm)
VBA30.5----	A	0.5	0.37	1.1	14-10 Cu	32 (3.6)	18-10	13 - 17 (1.5 - 1.7)	18-14	7 - 10.3 (8 - 1.2)	.7 - 1.0	4	14-2	35 (4)
VBA30.7----	A	0.7	0.55	1.6	14-10 Cu	32 (3.6)	18-10	13 - 17 (1.5 - 1.7)	18-14	7 - 10.3 (8 - 1.2)	1.1 - 1.6	6	14-2	35 (4)
VBA31.0----	A	1.0	0.75	2.1	14-10 Cu	32 (3.6)	18-10	13 - 17 (1.5 - 1.7)	18-14	7 - 10.3 (8 - 1.2)	1.4 - 2.0	8	14-2	35 (4)
VBA31.5----	A	1.5	1.1	3.0	14-10 Cu	32 (3.6)	18-10	13 - 17 (1.5 - 1.7)	18-14	7 - 10.3 (8 - 1.2)	2.2 - 3.2	12	14-2	35 (4)
VBA32.0----	A	2.0	1.5	3.4	14-10 Cu	32 (3.6)	18-10	13 - 17 (1.5 - 1.7)	18-14	7 - 10.3 (8 - 1.2)	2.8 - 4	16	14-2	35 (4)
VBA33.0----	B	3.0	2.2	4.8	14-10 Cu	32 (3.6)	18-10	13 - 17 (1.5 - 1.7)	18-14	7 - 10.3 (8 - 1.2)	3.5 - 5	20	14-2	35 (4)
VBA35.0----	B	5.0	4.0	7.6	14-10 Cu	32 (3.6)	18-10	13 - 17 (1.5 - 1.7)	18-14	7 - 10.3 (.8 - 1.2)	7 - 10	40	14-2	35 (4)
VBA37.5----	C	7.5	5.5	11	14-10 Cu	32 (3.6)	18-10	13 - 17 (1.5 - 1.7)	18-14	7 - 10.3 (8 - 1.2)	9 - 12	45	14-2	35 (4)
VBA310----	C	10	7.5	14	14-10 Cu	32 (3.6)	18-10	13 to17 (1.5 - 1.7)	14-10	18 - 22 (2 - 2.5)	11 - 16	60	14-2	35 (4)
VBA315----	C	15	11.0	21	14-10 Cu	20 - 60 (2.2 - 6.8)	14-8	17 - 22 (1.9 - 2.5)	14-10	18 - 22 (2 - 2.5)	17 - 22	80	14-2	35 (4)
VBA320----	C	20	15.0	27	10-1/0 Cu	20 - 60 (2.2 - 6.8)	14-8	17 - 22 (1.9 - 2.5)	18-3	27 - 40 (3.1 - 4.5)	22 - 32	125	14-2	35 (4)
VBA325----	D	25	18.5	34	10-1/0 Cu	20 - 60 (2.2 - 6.8)	14-6	22 - 27 (2.5 - 3.1)	18-3	27 - 40 (3.1 - 4.5)	28 - 40	150	14-2	35 (4)
VBA330----	D	30	22.0	40	10-1/0 Cu	20 - 60 (2.2 - 6.8)	14-6	22 - 27 (2.5 - 3.1)	18-3	27 - 40 (3.1 - 4.5)	28 - 40	150	14-2	35 (4)
VBA340----	D	40	30.0	52	10-1/0 Cu	20 - 60 (2.2 - 6.8)	14-6	22 - 27 (2.5 - 3.1)	18-3	27 - 40 (3.1 - 4.5)	40 - 50	200	14-2	35 (4)
VBA350----	E	50	37.0	65	10-1/0 Cu	20 - 60 (2.2 - 6.8)	12-1	22 - 27 (2.5 - 3.1)	10-1/0	36 - 53 (4.1 - 6)	57 - 75	300	14-2	35 (4)
VBA360----	E	60	45.0	77	3-3/0 Cu	80 (9)	12-1	22 - 27 (2.5 - 3.1)	10-1/0	36 - 53 (4.1 - 6)	70 - 90	350	14-2	35 (4)
VBA375----	F	75	55.0	96	3-3/0 Cu	80 (9)	12-1	22 - 27 (2.5 - 3.1)	10-1/0	36 - 53 (4.1 - 6)	80 - 100	400	14-2/0	50 (5.6)
VBA3100----	F	100	75.0	124	6 - 350 kcmil Cu	120 - 275 (14 - 31.1)	6 - 350 kcmil	120 - 275 (13.5 - 31.1)	6-3/0	124 - 210 (14 - 23.7)	50 - 200	800	14-2/0	50 (5.6)
VBA3125----	F	125	90.0	156	6 - 350 kcmil Cu	120 - 275 (14 - 31.1)	6 - 350 kcmil	120 - 275 (13.5 - 31.1)	6-3/0	124 - 210 (14 - 23.7)	50 - 200	800	14-2/0	50 (5.6)
VBA3125---HA1	F	—	90.0	178	6 - 350 kcmil Cu	120 - 275 (14 - 31.1)	6 - 350 kcmil	120 - 275 (13.5 - 31.1)	6-3/0	124 - 210 (14 - 23.7)	50 - 200	800	14-2/0	50 (5.6)

***** Wire Size in AWG unless noted otherwise. Use Copper (Cu) wire that is rated 167°F (75°C) minimum, 600 Vac.

Table 5. Wire Sizes and Tightening Torques for Conventional Bypass System with 500V to 600V Drive.

Part Number	Bypass Frame Size	HP	kW	Amps	Circuit Breaker		Disconnect Switch		Overload				Ground Lug	
					Wire Size *	Torque, lb-in (Nm)	Wire Size *	Torque, lb-in (Nm)	Wire Size *	Torque, lb-in (Nm)	Range, Amps	Max Backup Fuse, Amps	Wire Size *	Torque, lb-in (Nm)
VBA40.5----	C	0.5	0.37	.9	14-10 Cu	32 (3.6)	18-10	13 - 17 (1.5 - 1.7)	18-14	7 - 10.3 (8 - 1.2)	.7 - 1.0	4	14-2	35 (4)
VBA40.7----	C	0.7	0.55	1.3	14-10 Cu	32 (3.6)	18-10	13 - 17 (1.5 - 1.7)	18-14	7 - 10.3 (8 - 1.2)	.9 - 1.25	5	14-2	35 (4)
VBA41.0----	C	1.0	0.75	1.4	14-10 Cu	32 (3.6)	18-10	13 - 17 (1.5 - 1.7)	18-14	7 - 10.3 (8 - 1.2)	1.1 - 1.6	6	14-2	35 (4)
VBA41.5----	C	1.5	1.1	2.1	14-10 Cu	32 (3.6)	18-10	13 - 17 (1.5 - 1.7)	18-14	7 - 10.3 (8 - 1.2)	1.8 - 2.5	10	14-2	35 (4)
VBA42.0----	C	2.0	1.5	2.7	14-10 Cu	32 (3.6)	18-10	13 - 17 (1.5 - 1.7)	18-14	7 - 10.3 (8 - 1.2)	2.2 - 3.2	12	14-2	35 (4)
VBA43.0----	C	3.0	2.2	3.9	14-10 Cu	32 (3.6)	18-10	13 - 17 (1.5 - 1.7)	18-14	7 - 10.3 (8 - 1.2)	2.8 - 4	16	14-2	35 (4)
VBA45.0----	C	5.0	4.0	6.1	14-10 Cu	32 (3.6)	18-10	13 - 17 (1.5 - 1.7)	18-14	7 - 10.3 (8 - 1.2)	4.5 - 6.3	25	14-2	35 (4)
VBA47.5----	C	7.5	5.5	9	14-10 Cu	32 (3.6)	18-10	13 - 17 (1.5 - 1.7)	18-14	7 - 10.3 (8 - 1.2)	7 - 10	40	14-2	35 (4)
VBA410.----	C	10	7.5	11	14-10 Cu	32 (3.6)	18-10	13 - 17 (1.5 - 1.7)	18-14	7 - 10.3 (8 - 1.2)	9 - 2	45	14-2	35 (4)
VBA415.----	C	15	11.0	17	14-10 Cu	32 (3.6)	14-8	17 - 22 (1.9 - 2.5)	14-10	18 - 22 (2 - 2.5)	14 - 20	80	14-2	35 (4)
VBA420.----	C	20	15.0	22	10-1/0 Cu	20 - 60 (2.2 - 6.8)	14-8	17 - 22 (1.9 - 2.5)	14-10	18 - 22 (2 - 2.5)	17 - 22	80	14-2	35 (4)
VBA425.----	C	25	18.5	27	10-1/0 Cu	20 - 60 (2.2 - 6.8)	14-6	22 - 27 (2.5 - 3.1)	18-3	27 - 40 (3.1 - 4.5)	22 - 32	125	14-2	35 (4)
VBA430.----	D	30	22.0	32	10-1/0 Cu	20 - 60 (2.2 - 6.8)	14-6	22 - 27 (2.5 - 3.1)	18-3	27 - 40 (3.1 - 4.5)	28 - 40	150	14-2	35 (4)
VBA440.----	D	40	30.0	41	10-1/0 Cu	20 - 60 (2.2 - 6.8)	14-6	22 - 27 (2.5 - 3.1)	18-3	27 - 40 (3.1 - 4.5)	36 - 45	175	14-2	35 (4)
VBA450.----	E	50	37.0	52	10-1/0 Cu	20 - 60 (2.2 - 6.8)	14-6	22 - 27 (2.5 - 3.1)	18-3	27 - 40 (3.1 - 4.5)	40 - 50	200	14-2	35 (4)
VBA460.----	E	60	45.0	62	10-1/0 Cu	20 - 60 (2.2 - 6.8)	12-1	22 - 27 (2.5 - 3.1)	10-1/0	36 - 53 (4.1 - 6)	45 - 63	250	14-2	35 (4)
VBA475.----	F	75	55.0	77	3-3/0 Cu	80 (9)	12-1	22 - 27 (2.5 - 3.1)	10-1/0	36 - 53 (4.1 - 6)	70 - 90	350	14-2/0	50 (5.6)
VBA4100----	F	100	75.0	99	3-3/0 Cu	80 (9)	12-1	22 - 27 (2.5 - 3.1)	10-1/0	36 - 53 (4.1 - 6)	80 - 100	400	14-2/0	50 (5.6)
VBA4125----	F	125	90.0	125	6 - 350 kcmil Cu	120 - 275 (14 - 31.1)	6 - 350 kcmil	120 - 275 (14 - 31.1)	10-1/0	124 - 210 (14 - 23.7)	50 - 200	800	14-2/0	50 (5.6)

***** Wire Size in AWG unless noted otherwise. Use Copper (Cu) wire that is rated 167°F (75°C) minimum, 600 Vac.

Motor Cable Length

Motor cable length is given to ensure performance of only the drive, not the suitability of the motor when connected to a drive at this distance.

Maximum motor cable length is 164 ft (50 m)

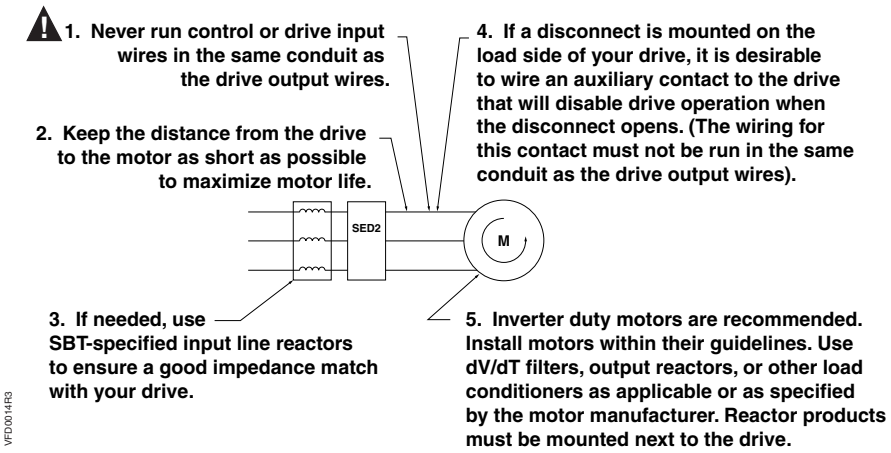


Figure 6. Motor Cable Installation Notes.

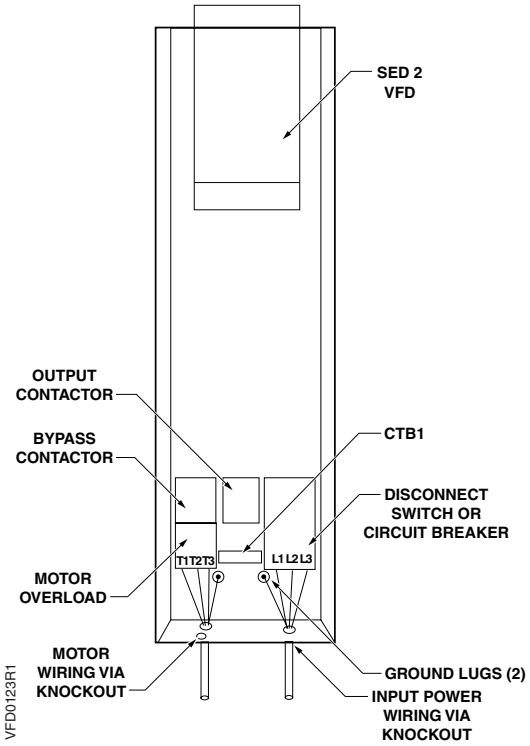


Figure 7. Power Wire Connections for Frame Sizes A Through E (NEMA Type 1).

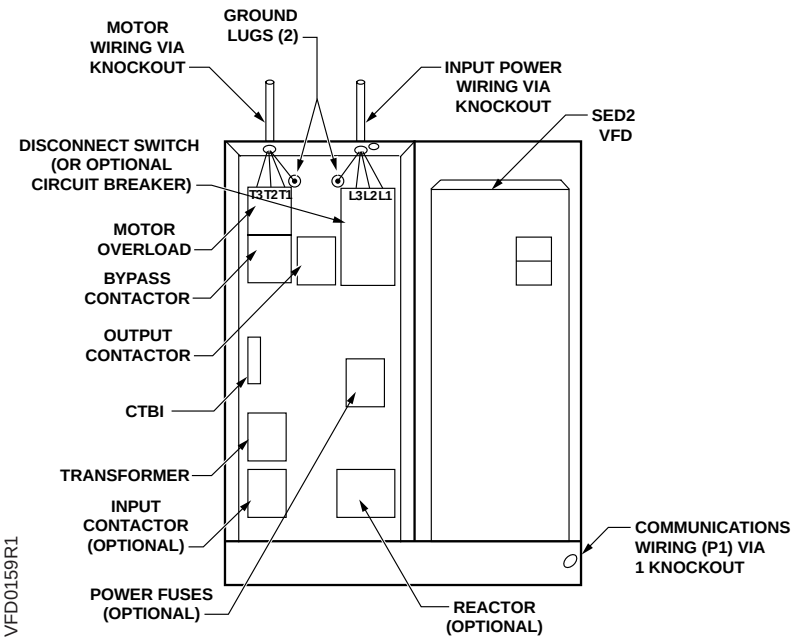


Figure 8. Power Wire Connections for Frame Size F (NEMA Type 1).

Wiring Diagrams

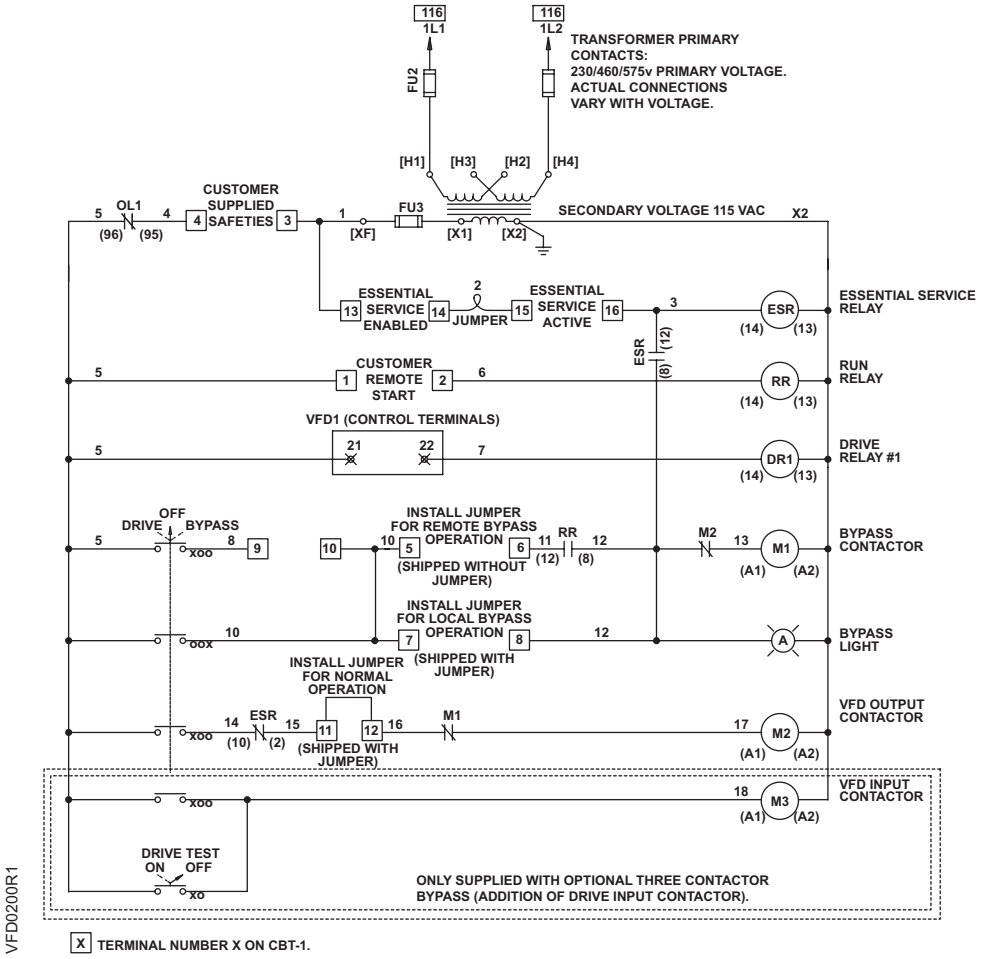
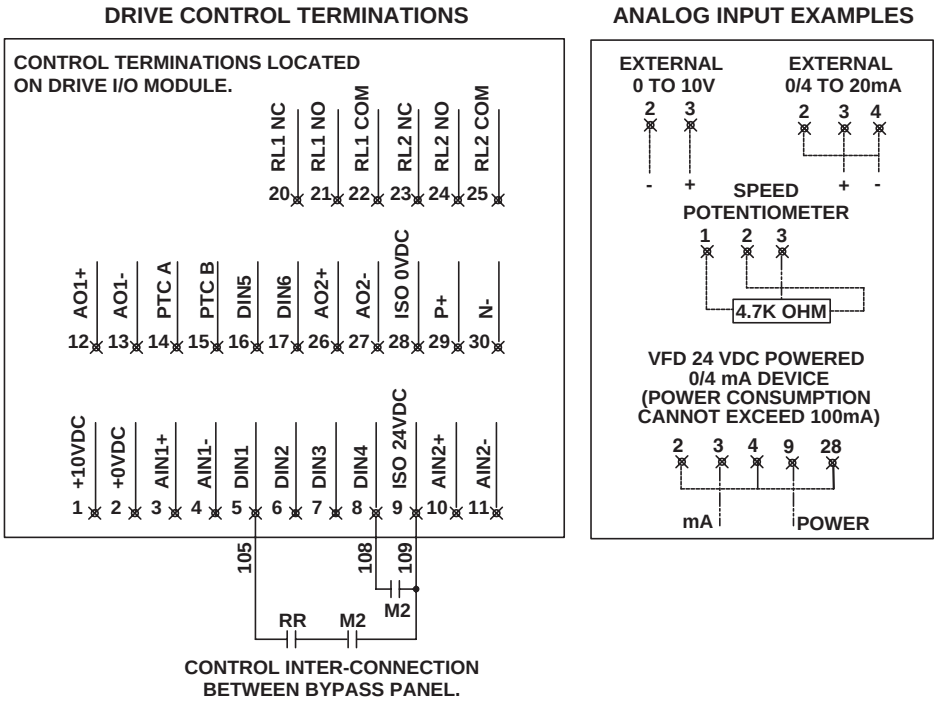


Figure 9. C-Bypass 120 Vac Control Circuit.



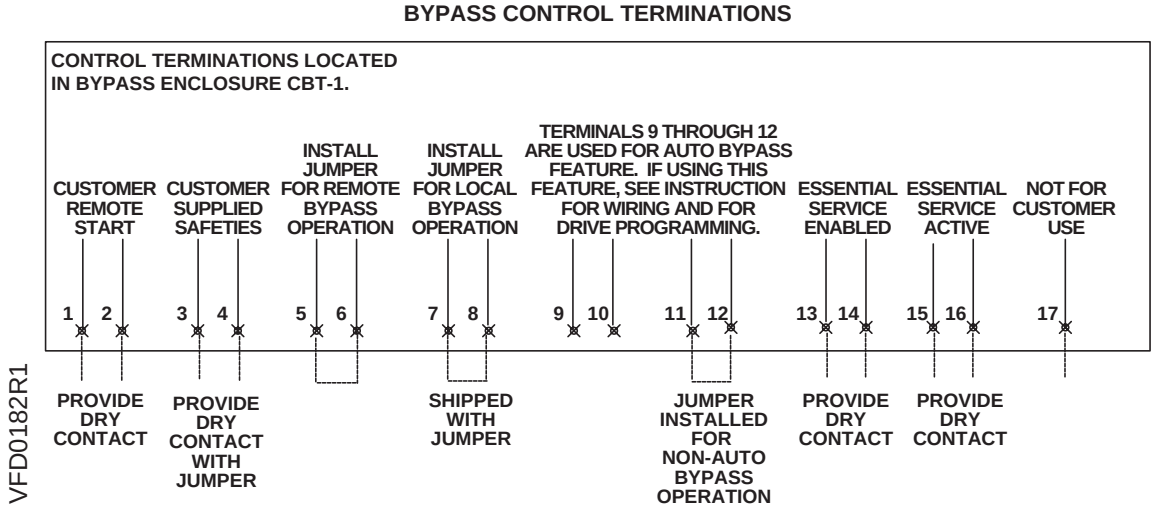
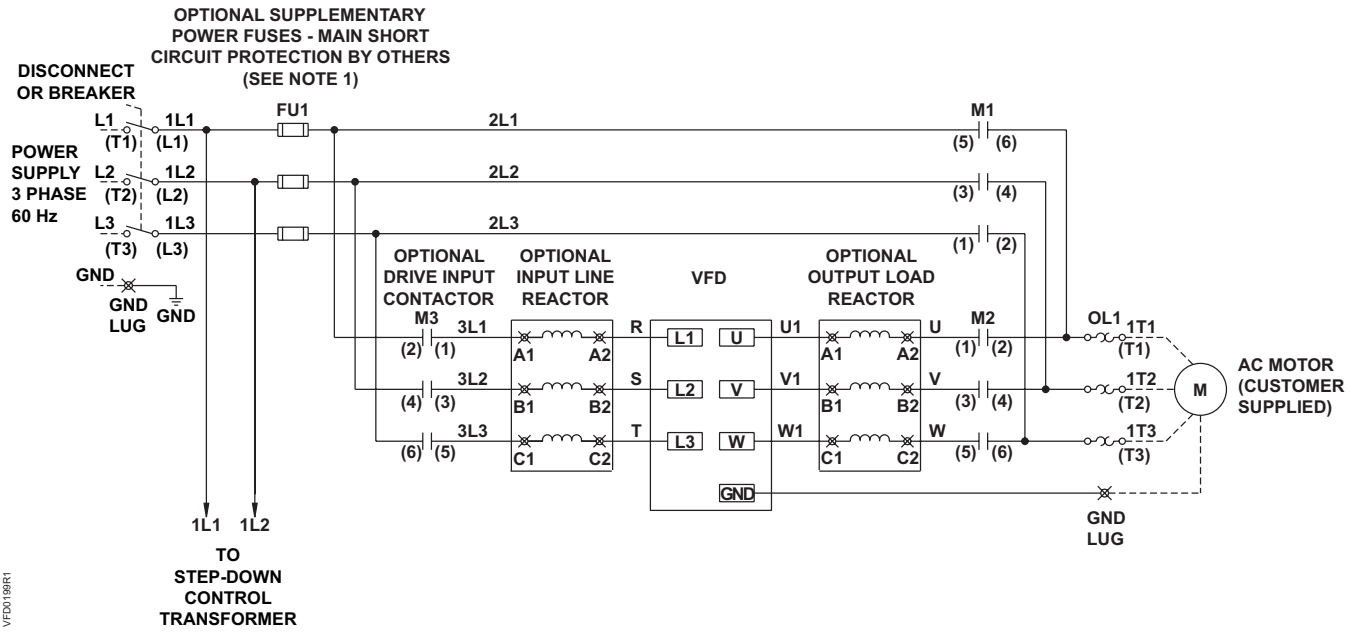


Figure 10. C-Bypass Terminations.



NOTES:

1. Branch circuit protection to be provided by installer, per UL508A, if not provided with drive.
2. For bypass operation, modify these drive parameters: P0704 (0) and P0704 (1) = 3.
3. Control and communication wiring should be 300V UL minimum.
4. Communication wiring should be run with maximum separation possible from all other wiring.
5. Essential service mode operates the motor full speed (bypass) with no protection for the motor or system.
6. Ensure that automatic bypass will not damage the system before activating.
7. See Siemens publication *SED2 VFD Conventional Bypass Option Operating Instructions* (125-3215) for proper fuse and wire sizes.
8. See Siemens publication *SED2 VFD Startup, Operation and Maintenance Manual* (125-3201) for SED2 VFD input/output signal wiring details.

Figure 11. C-Bypass Power Wiring Schematic.