



SED2 Variable Frequency Drives

Product Description

Provides a quick and efficient site installation of the SED2 Variable Frequency Drive (VFD).

Product Numbers

Your Product Number:	S	E	D	2	-				/			X		
Example Product Number:	S	E	D	2	-	0	.	7	5	/	2	2	X	
Model:	SED2-													
kW:	0.37, 0.55, 0.75, 1.1, 1.5, 2.2, (uses 2 to 4 spaces plus a divider "/") 3, 4, 5.5, 7.5, 11, 15, 18.5, 22, 30, 37, 45, 55, 75, 90													
Voltage:	2 = 200 to 240 3 = 380 to 480 4 = 500 to 600													
NEMA:	2 (IP 20) 1 NEMA Type 1 5 NEMA Type 12 (IP 54) *													
Other:	X include with all part #'s (leave blank)													

* Available with Voltage Codes 3 and 4.

Example shown:
SED2-0.75/22X =
SED2 only, 0.75 kW (1hp), 200V to 240V, open type IP20.

Frame Sizes and Power Ratings

SED2 IP20 and NEMA Type 1 frame sizes and power ranges are as follows:

HP	.5	.7	1	1.5	2	3	4	5	7.5	10	15	20	25	30	40	50	60	75	100	125
kW	.37	.5	.75	1.1	1.5	2.2	3	4	5.5	7.5	11	15	19	22	30	37	45	55	75	90
240V	A		B			C		D			E		F		Hatched					
480V	A			B		C			D			E		F						
575V	Hatched	C							D			E		F						

SED2 IP54/NEMA Type 12 frame sizes and power ranges are as follows:

HP	.5	.7	1	1.5	2	3	4	5	7.5	10	15	20	25	30	40	50	60	75	100	125
kW	.37	.5	.75	1.1	1.5	2.2	3	4	5.5	7.5	11	15	19	22	30	37	45	55	75	90
480V	Hatched	B					C			D			E							
575V	Hatched	C							D			E								

Table 1. SED2 Full Load Amp (FLA) Ratings.

Output Rating		Output Current Max (amps)		
HP	kW	208V to 240V (3-Phase)	380V to 480V (3-Phase)	500V to 600V (3-Phase)
0.5	0.37	2.3	1.2	—
0.75	0.55	3.0	1.6	—
1.0	0.75	3.9	2.1	1.4
1.5	1.1	5.5	3.0	2.1
2.0	1.5	7.4	4.0	2.7
3.0	2.2	10.4	5.9	3.9
4.0	3.0	13.6	7.7	5.4
5.0	4.0	17.5	10.2	6.1
7.5	5.5	22.0	13.2	9.0
10.0	7.5	28.0	18.4	11.0
15.0	11.0	42.0	26.0	17.0
20.0	15.0	54.0	32.0	22.0
25.0	18.5	68.0	38.0	27.0
30.0	22.0	80.0	45.0	32.0
40.0	30.0	104.0	62.0	41.0
50.0	37.0	130.0	75.0	52.0
60.0	45.0	154.0	90.0	62.0
75.0	55.0	—	110.0	77.0
100.0	75.0	—	145.0	99.0
125.0	90.0	—	178.0	125.0

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.

Required Tools

See *Mounting and Dimensions* to determine correct tool sizing.

Expected Installation Time

15 minutes

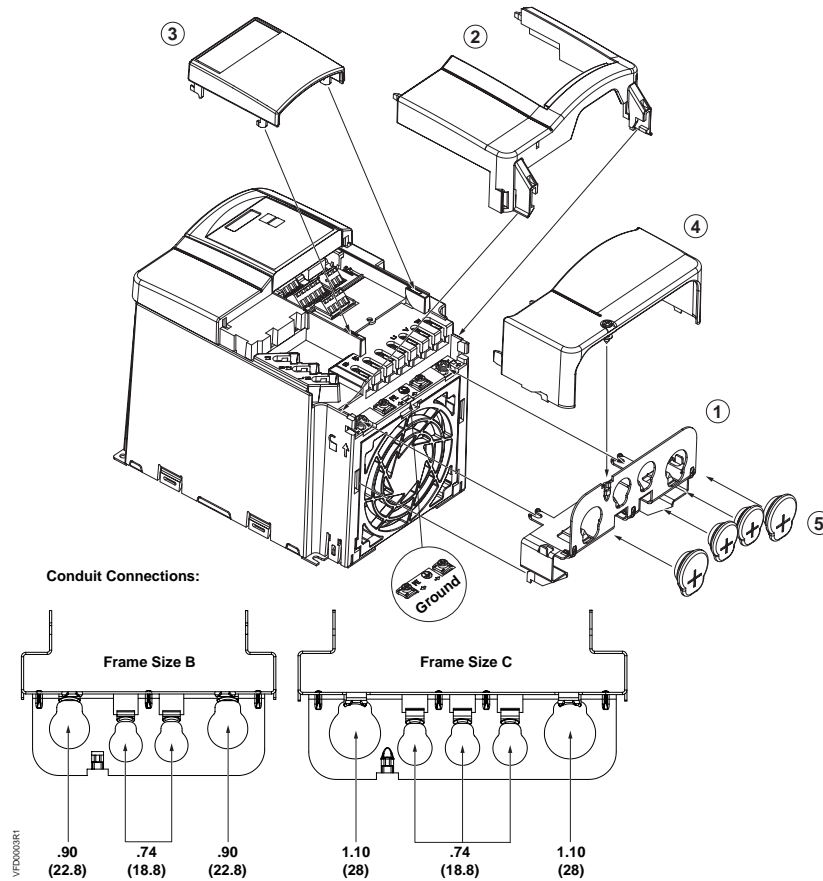


Figure 2. Frame Size B & C Gland Plate Installation and Conduit Connection Diameters in Inches (Millimeters).

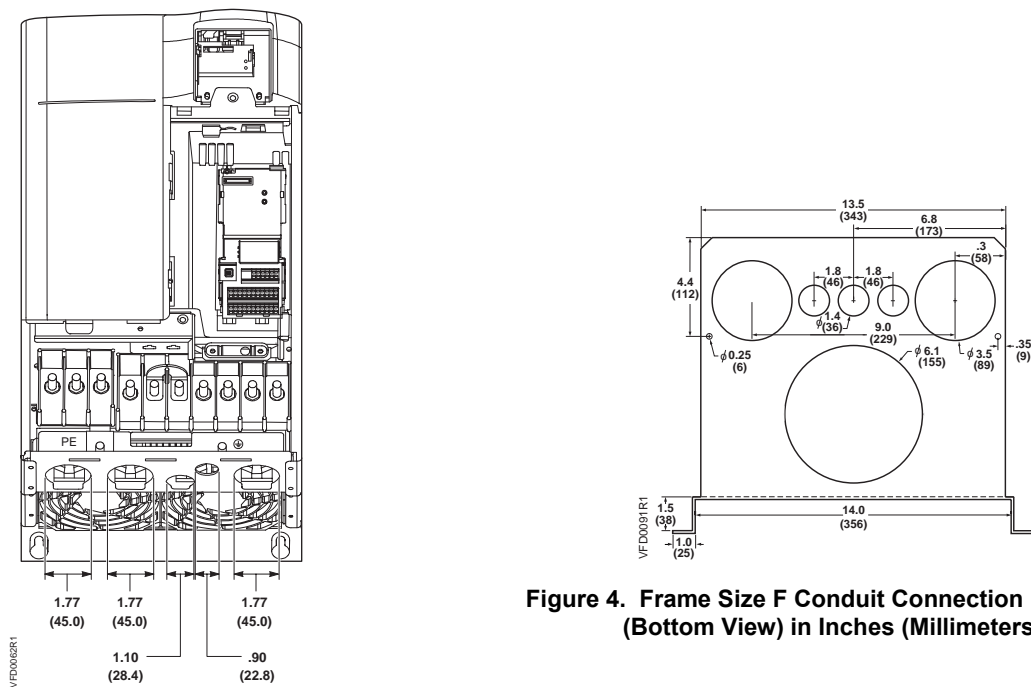


Figure 4. Frame Size F Conduit Connection Diameters (Bottom View) in Inches (Millimeters).

Figure 3. Frame Size D & E Conduit Connection Diameters in Inches (Millimeters).

Mounting and Dimensions

Mount the SED2 so there is a minimum clearance for ventilation and equipment access.



CAUTION:

Overheating/Ventilation:
 Install SED2 vertically for optimum ventilation. Do not obstruct SED2 vents. Additional ventilation may be required if SED2 is mounted horizontally.

IP20 SED2s

Table 2. IP20 SED2 Overall Dimensions in Inches (Millimeters).

Frame Size	Height x Width x Depth	Mounting Specification	Tightening Torque lb-in (Nm)	Weight lb (kg)
A	6.8 x 2.9 x 5.9 (173 x 73 x 149)	2 x M4 Bolts, nuts, washers, or connecting to DIN rail	22 (2.5)	2.9 (1.3)
B	8.0 x 5.9 x 6.8 (202 x 149 x 172)	4 x M4 Bolts, nuts, washers		7.5 (3.4)
C	9.6 x 7.3 x 7.7 (245 x 185 x 195)	4 x M5 Bolts, nuts, washers	26 (3.0)	12.1 (5.5)
D	20.5 x 10.8 x 9.6 (520 x 275 x 245)	4 x M8 Bolts, nuts, washers	115 (13)	35.3 (16)
E	25.6 x 10.8 x 9.6 (650 x 275 x 245)			44.1 (20)
F	33.5 x 13.8 x 12.6 (850 x 350 x 320)		221 (25)	116 (53)

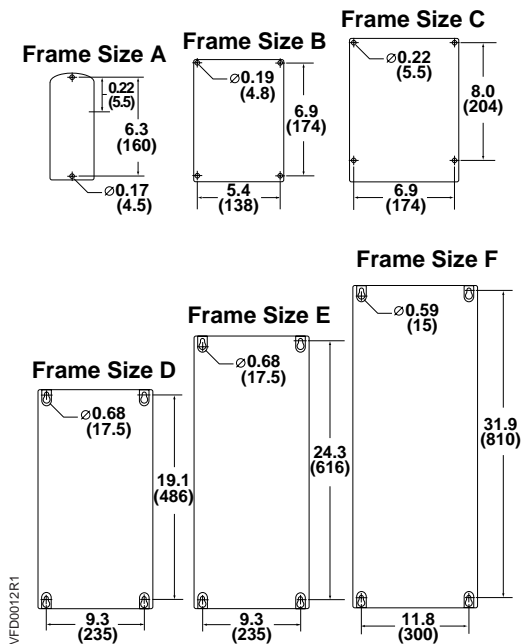
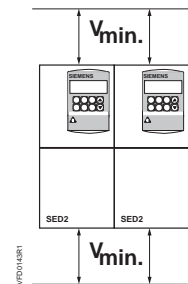


Figure 5. IP20 SED2 Mounting Dimensions in Inches (Millimeters).

Frame Size	V _{min} Clearance in Inches (Millimeters)
A, B, C	4 (100)
D, E	11-3/4 (300)
F	13-3/4 (350)

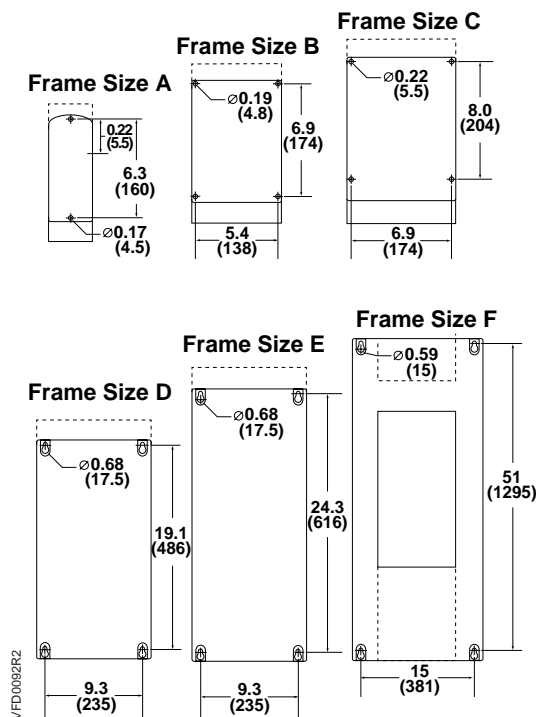


NOTE: When fitted with a protective shield, allow 12-inches (305 mm) of space between each SED2.

NEMA Type 1 SED2s

Table 3. NEMA Type 1 SED2 Overall Dimensions in Inches (Millimeters).

Frame Size	Height x Width x Depth	Mounting Specification	Tightening Torque lb-in (Nm)	Weight lb (kg)
A	9.1 x 2.9 x 5.9 (231 x 73 x 149)	2 x M4 Bolts, nuts, washers, or connecting to DIN rail	22 (2.5)	3.2 (1.5)
B	11.8 x 5.9 x 6.8 (300 x 49 x 172)			8.3 (3.8)
C	13.8 x 7.3 x 7.7 (351 x 185 x 195)	4 x M5 Bolts, nuts, washers	26 (3.0)	13.6 (6.2)
D	24.6 x 10.8 x 9.6 (625 x 275 x 245)	4 x M8 Bolts, nuts, washers	115 (13)	37.5 (17.1)
E	29.7 x 10.8 x 9.6 (754 x 275 x 245)			46.4 (21.1)
F	54.5 x 16.0 x 14.0 (1384 x 406 x 356)			221 (25)



Frame Size	V _{min} Clearance in Inches (Millimeters)
A, B, C	4 (100)
D, E	11-3/4 (300)
F	13-3/4 (350)

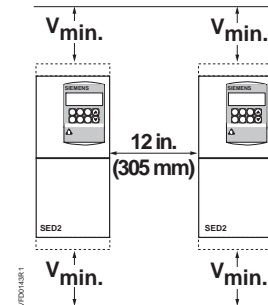
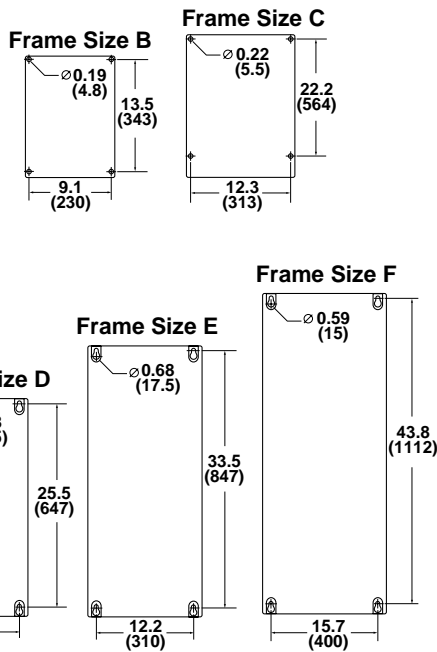


Figure 6. NEMA Type 1 SED2 Mounting Dimensions in Inches (Millimeters).

IP54/NEMA Type 12 SED2s

Table 4. IP54/NEMA Type 12 SED2 Overall Dimensions in Inches (Millimeters).

Frame Size	Overall Dimensions Height x Width x Depth	Mounting Clearance Top x Bottom x Sides	Mounting Specification	Tightening Torque lb-in (Nm)	Weight lb (kg)
B	15.2 x 10.6 x 10.6 (385 x 270 x 270)	5.9 x 5.9 x 3.9 (150 x 150 x 100)	4 x M6 Bolts, nuts, washers	44 (5)	22 (10)
C	23.9 x 13.8 x 11.2 (606 x 350 x 284)				42 (19)
D	27.0 x 14.2 x 13.9 (685 x 360 x 200)	7.9 x 7.9 x 5.9 (200 x 200 x 150)	4x M8 Bolts, nuts, washers	115 (13)	77 (35)
E	34.8 x 14.2 x 17.8 (885 x 360 x 453)				105 (48)
F	45.3 x 17.7 x 18.6 (1150 x 450 x 473)	11.8 x 9.8 x 5.9 (300 x 250 x 150)		177 (20)	178 (81)



Frame Size	V _{min} Clearance in Inches (Millimeters)
A, B, C	4 (100)
D, E	11-3/4 (300)
F	13-3/4 (350)

NOTE: In all cases, S_{min} Clearance is 5-7/8 inches (150 millimeters).

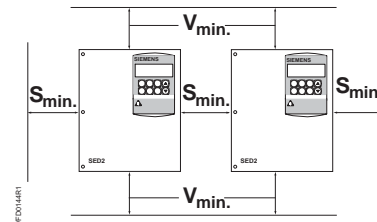


Figure 7. IP54/NEMA Type 12 SED2 Mounting Dimensions in Inches (Millimeters).

Wiring

**Tightening Torque for Connector
 Terminals**

Frame Size	A	B	C	D	E	F
Tightening Torque lb-in (Nm)	9.7 (1.1)	13.3 (1.5)	19.9 (2.25)	88.5 (10) max.	88.5 (10) max.	442 (50)

**Cable Cross-Sections for Power and
 Motor Cables**

Tables 5 through 7 provide cable cross-sections for input power cables and for motor cables.

Table 5. Cable Cross-Sections for Input Voltage Range 3Ø AC 200V through 240V.

Output Rating kW (hp)	Input Power Cable		Motor Cable	
	Min. Cross-Section AWG (mm ²)	Max. Cross-Section AWG (mm ²)	Min. Cross-Section AWG (mm ²)	Max. Cross-Section AWG (mm ²)
0.37 (.50)	17 (1)	13 (2.5)	17 (1)	13 (2.5)
0.55 (.75)	17 (1)	13 (2.5)	17 (1)	13 (2.5)
0.75 (1.0)	17 (1)	13 (2.5)	17 (1)	13 (2.5)
1.1 (1.5)	17 (1)	9 (6)	17 (1)	9 (6)
1.5 (2.0)	15 (1.5)	9 (6)	17 (1)	9 (6)
2.2 (3.0)	13 (2.5)	9 (6)	17 (1)	9 (6)
3 (4.0)	11 (4)	7 (10)	15 (1.5)	7 (10)
4 (5.0)	11 (4)	7 (10)	11 (4)	7 (10)
5.5 (7.5)	11 (4)	7 (10)	11 (4)	7 (10)
7.5 (10)	7 (10)	2 (35)	7 (10)	2 (35)
11 (15)	5 (16)	2 (35)	16 (5)	2 (35)
15 (20)	5 (16)	2 (35)	5 (16)	2 (35)
18.5 (25)	3 (25)	2 (35)	5 (16)	2 (35)
22 (30)	2 (35)	2 (35)	2 (35)	2 (35)
30 (40)	0 (50)	-5 (150)	0 (50)	-5 (150)
37 (50)	-2 (70)	-5 (150)	-2 (70)	-5 (150)
45 (60)	-2 (70)	-5 (150)	-3 (95)	-5 (150)

Table 7. Cable Cross-Sections for Input Voltage Range 3Ø AC 500V through 600V.

Output Rating kW (hp)	Input Power Cable		Motor Cable	
	Min. Cross-Section AWG (mm ²)	Max. Cross-Section AWG (mm ²)	Min. Cross-Section AWG (mm ²)	Max. Cross-Section AWG (mm ²)
0.75 (1.0)	17 (1)	7 (10)	17 (1)	7 (10)
1.1 (1.5)	17 (1)	7 (10)	17 (1)	7 (10)
1.5 (2.0)	17 (1)	7 (10)	17 (1)	7 (10)
2.2 (3.0)	17 (1)	7 (10)	17 (1)	7 (10)
3 (4.0)	17 (1)	7 (10)	17 (1)	7 (10)
4 (5.0)	17 (1)	7 (10)	17 (1)	7 (10)
5.5 (7.5)	15 (1.5)	7 (10)	15 (1.5)	7 (10)
7.5 (10)	13 (2.5)	7 (10)	13 (2.5)	7 (10)
11 (15)	11 (4)	7 (10)	11 (4)	7 (10)
15 (20)	9 (6)	2 (35)	9 (6)	2 (35)
18.5 (25)	9 (6)	2 (35)	9 (6)	2 (35)
22 (30)	7 (10)	2 (35)	7 (10)	2 (35)
30 (40)	5 (16)	2 (35)	5 (16)	2 (35)
37 (50)	3 (25)	2 (35)	5 (16)	2 (35)
45 (60)	3 (25)	-5 (150)	3 (25)	-5 (150)
55 (75)	0 (50)	-5 (150)	2 (35)	-5 (150)
75 (100)	-2 (70)	-5 (150)	0 (50)	-5 (150)
90 (125)	-2 (70)	-5 (150)	0 (50)	-5 (150)

Table 6. Cable Cross-Sections for Input Voltage Range 3Ø AC 380V through 480V.

Output Rating kW (hp)	Input Power Cable		Motor Cable	
	Min. Cross-Section AWG (mm ²)	Max. Cross-Section AWG (mm ²)	Min. Cross-Section AWG (mm ²)	Max. Cross-Section AWG (mm ²)
0.37 (.50)	17 (1)	13 (2.5)	17 (1)	13 (2.5)
0.55 (.75)	17 (1)	13 (2.5)	17 (1)	13 (2.5)
0.75 (1.0)	17 (1)	13 (2.5)	17 (1)	13 (2.5)
1.1 (1.5)	17 (1)	13 (2.5)	17 (1)	13 (2.5)
1.5 (2.0)	17 (1)	13 (2.5)	17 (1)	13 (2.5)
2.2 (3.0)	17 (1)	9 (6)	17 (1)	9 (6)
3 (4.0)	17 (1)	9 (6)	17 (1)	9 (6)
4 (5.0)	17 (1)	9 (6)	17 (1)	9 (6)
5.5 (7.5)	13 (2.5)	7 (10)	13 (2.5)	7 (10)
7.5 (10)	11 (4)	7 (10)	11 (4)	7 (10)
0.37 (.50)	17 (1)	13 (2.5)	17 (1)	13 (2.5)
0.55 (.75)	17 (1)	13 (2.5)	17 (1)	13 (2.5)
0.75 (1.0)	17 (1)	13 (2.5)	17 (1)	13 (2.5)
1.1 (1.5)	17 (1)	13 (2.5)	17 (1)	13 (2.5)
1.5 (2.0)	17 (1)	13 (2.5)	17 (1)	13 (2.5)
2.2 (3.0)	17 (1)	9 (6)	17 (1)	9 (6)
3 (4.0)	17 (1)	9 (6)	17 (1)	9 (6)
4 (5.0)	17 (1)	9 (6)	17 (1)	9 (6)
5.5 (7.5)	13 (2.5)	7 (10)	13 (2.5)	7 (10)
7.5 (10)	11 (4)	7 (10)	11 (4)	7 (10)
11 (15)	9 (6)	7 (10)	9 (6)	7 (10)
15 (20)	7 (10)	2 (35)	7 (10)	2 (35)
18.5 (25)	7 (10)	2 (35)	7 (10)	2 (35)
22 (30)	5 (16)	2 (35)	5 (16)	2 (35)
30 (40)	3 (25)	2 (35)	3 (25)	2 (35)
37 (50)	3 (25)	2 (35)	2 (35)	2 (35)
45 (60)	2 (35)	-5 (150)	2 (35)	-5 (150)
55 (75)	-2 (70)	-5 (150)	-2 (70)	-5 (150)
75 (100)	-2 (70)	-5 (150)	-3 (95)	-5 (150)
90 (125)	-2 (70)	-5 (150)	-3 (95)	-5 (150)

Input Power Connection



WARNING:

Use only permanently wired input power connections.

Connect input power to SED2 terminals L1, L2, and L3.

Motor Cable Length

Maximum motor cable length is 164 ft (50 m). Motor cable length is given to ensure performance of only the SED2, not the suitability of the motor when connected to a SED2 at this distance. See Figure 8 for motor cable installation notes.

Motor Connection

The motor nameplate indicates the required supply voltage and method of connection (delta, Δ , or star/wye, 'Y', configuration). Connect motor wiring to SED2 terminals U, V, and W. See Figure 9.

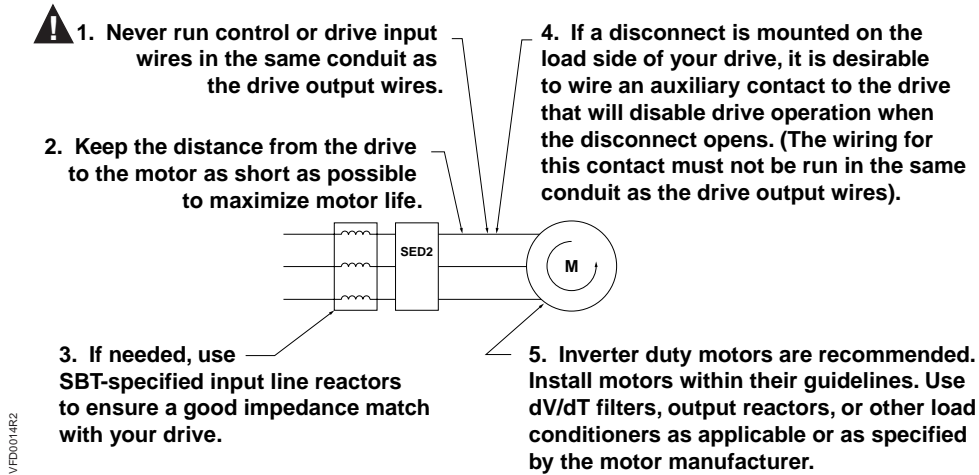


Figure 8. Motor Cable Installation Notes.

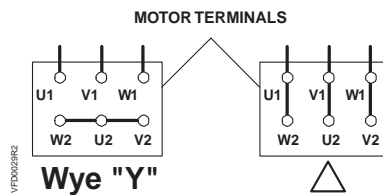


Figure 9. SED2 Motor Connections.

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