

Altivar Process

Variable Speed Drives ATV630, ATV650

Installation Manual

03/2019



Characteristics of the Power Part Terminals

Description of the Power Terminals

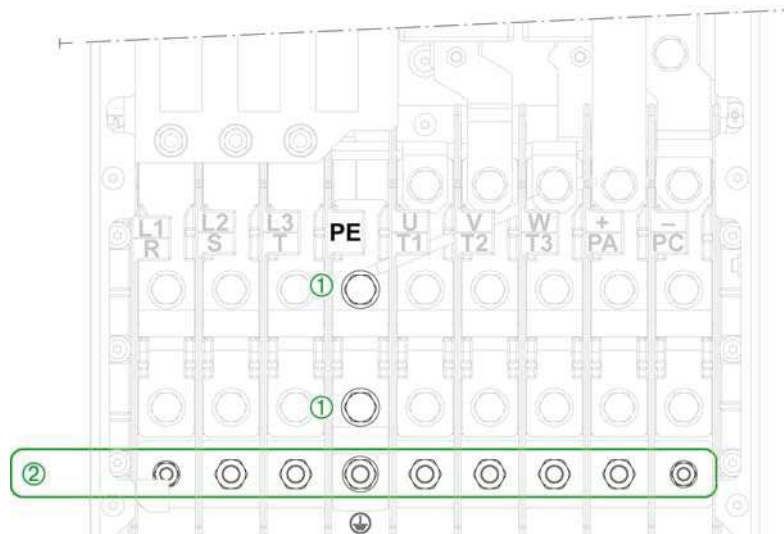
Terminal	Function
PE or 	Ground connection terminal
R/L1 S/L2 T/L3	AC supply mains
U/T1 V/T2 W/T3	Outputs to the motor

Ground Cables

Ground cable cross sections of input and output ground cables are the same as those given for the input and output cables. Minimum cross section of protective ground cable is 10 mm² (AWG 8) and 16 mm² (AWG 6) for AL cable.

Tightening torques according to frame size

- Frame sizes 1...3: 2.5 N·m (22.1 lb.in)
- Frame size 3S: 12 N·m (106.2 lb.in)
- Frame size 3Y:
 - ATV•30U22Y6...U75Y6, ATV•30D11Y6: 3 N·m (26.5 lb.in)
 - ATV•30D15Y6, D18Y6: 5.4 N·m (47.8 lb.in)
 - ATV•30D22Y6, D30Y6: 12 N·m (106.2 lb.in)
- Frame size 4: 5 N·m (44.2 lb.in)
- Frame size 5: 25 N·m (221.3 lb.in)
- Frame sizes 5S and 5Y: 41 N·m (362.89 lb.in)
- Frame size 6:
 - ①: 27 N·m (239 lb.in)
 - ②: 13.5 N·m (119.5 lb.in)



- Frame size 7: 37.5...50.8 N·m (332...449 lb.in)

Frame Size 1

ATV630 (**)	Supply Terminals (L1, L2, L3)			Output Terminals (U, V, W)		
	Wire Cross Section		Tightening Torque	Wire Cross Section		Tightening Torque
	Minimum	Maximum (*)	Rated	Minimum	Maximum (*)	Rated
	mm² (AWG)	mm² (AWG)	N·m (lb.in)	mm² (AWG)	mm² (AWG)	N·m (lb.in)
U07••, U15••, U22••, U30N4, U40N4	2.5 (14)	6 (10)	1.3 (11.5)	2.5 (14)	6 (10)	1.3 (11.5)
U55N4, U30M3	2.5 (14)	6 (10)	1.3 (11.5)	4 (12)	6 (10)	1.3 (11.5)
U40M3	4 (12)	6 (10)	1.3 (11.5)	6 (10)	6 (10)	1.3 (11.5)

Only use cables with solid wires or rigid stranded wires.
 (*) Maximum cross section of the terminals
 (**) The 2 dots may stand for M3 or N4. The values for ATV•••••N4 catalog numbers also apply to ATV•••••N4Z.

Frame Size 2

ATV630 (**)	Supply Terminals (L1, L2, L3)			Output Terminals (U, V, W)		
	Wire Cross Section		Tightening Torque	Wire Cross Section		Tightening Torque
	Minimum	Maximum (*)	Rated	Minimum	Maximum (*)	Rated
	mm² (AWG)	mm² (AWG)	N·m (lb.in)	mm² (AWG)	mm² (AWG)	N·m (lb.in)
U22S6X...U75S6X D11S6X...D15S6X D11N4	6 (10)	6 (10)	1.8 (15.6)	6 (10)	10 (8)	1.8 (15.6)
U75N4	4 (12)	6 (10)	1.8 (15.6)	6 (10)	10 (8)	1.8 (15.6)
U55M3	6 (10)	6 (10)	1.8 (15.6)	10 (8)	10 (8)	1.8 (15.6)

Only use cables with solid wires or rigid stranded wires.
 (*) Maximum cross section of the terminals
 (**) The values for ATV.....N4 catalog numbers also apply to ATV.....N4Z.

Frame Size 3

ATV630 (**)	Supply Terminals (L1, L2, L3)			Output Terminals (U, V, W)		
	Wire Cross Section		Tightening Torque	Wire Cross Section		Tightening Torque
	Minimum	Maximum (*)	Rated	Minimum	Maximum (*)	Rated
	mm² (AWG)	mm² (AWG)	N·m (lb.in)	mm² (AWG)	mm² (AWG)	N·m (lb.in)
D15N4, D18N4, U75M3	10 (8)	16 (6)	3.5 (30.4)	10 (8)	16 (6)	3.5 (30.4)
D22N4, D11M3	10 (8)	16 (6)	3.5 (30.4)	16 (6)	16 (6)	3.5 (30.4)

Only use cables with solid wires or rigid stranded wires.
 (*) Maximum cross section of the terminals
 (**) The values for ATV630...N4 catalog numbers also apply to ATV630...N4Z.

Frame Size 3S

ATV630	Supply Terminals (L1, L2, L3)			Output Terminals (U, V, W)		
	Wire Cross Section		Tightening Torque	Wire Cross Section		Tightening Torque
	Minimum	Maximum (*)	Rated	Minimum	Maximum (*)	Rated
	mm² (AWG)	mm² (AWG)	N·m (lb.in)	mm² (AWG)	mm² (AWG)	N·m (lb.in)
D18S6, D22S6	10 (8)	10 (8)	12 (106.2)	10 (8)	10 (8)	12 (106.2)
Only use cables with solid wires or rigid stranded wires. (*) Maximum cross section of the terminals						

Frame Size 3Y

ATV630	Supply Terminals (L1, L2, L3)			Output Terminals (U, V, W)		
	Wire Cross Section		Tightening Torque	Wire Cross Section		Tightening Torque
	Minimum	Maximum (*)	Rated	Minimum	Maximum (*)	Rated
	mm² (AWG)	mm² (AWG)	N·m (lb.in)	mm² (AWG)	mm² (AWG)	N·m (lb.in)
U22Y6...U75Y6, D11Y6	4 (12)	10 (8)	3 (26.5)	4 (12)	10 (8)	3 (26.5)
D15Y6, D18Y6	6 (10)	10 (8)	5.4 (47.7)	6 (10)	10 (8)	5.4 (47.7)
D22Y6, D30Y6	10 (8)	10 (8)	12 (106.2)	10 (8)	10 (8)	12 (106.2)
Only use cables with solid wires or rigid stranded wires. (*) Maximum cross section of the terminals						

Frame Size 4

ATV630 (**)	Supply Terminals (L1, L2, L3)			Output Terminals (U, V, W)		
	Wire Cross Section		Tightening Torque	Wire Cross Section		Tightening Torque
	Minimum	Maximum (*)	Rated	Minimum	Maximum (*)	Rated
	mm² (AWG)	mm² (AWG)	N·m (lb.in)	mm² (AWG)	mm² (AWG)	N·m (lb.in)
D30N4, D15M3	25 (4)	50 (1)	12 (106.2)	25 (4)	50 (1)	12 (106.2)
D37N4, D18M3	35 (3)	50 (1)	12 (106.2)	35 (3)	50 (1)	12 (106.2)
D45N4, D22M3	35 (2)	50 (1)	12 (106.2)	50 (1)	50 (1)	12 (106.2)

Only use cables with rigid stranded wires.
 (*) Maximum cross section of the terminals
 (**) The values for ATV630...N4 catalog numbers also apply to ATV630...N4Z.

Frame Size 5

ATV630 (**)	Supply Terminals (L1, L2, L3)			Output Terminals (U, V, W)		
	Wire Cross Section		Tightening Torque	Wire Cross Section		Tightening Torque
	Minimum	Maximum (*)	Min. to Maximum	Minimum	Maximum (*)	Rated
	mm² (AWG)	mm² (AWG)	N·m (lb.in)	mm² (AWG)	mm² (AWG)	N·m (lb.in)
D55N4	70 (1/0)	120 (250MCM)	25 (221.3)	70 (1/0)	120 (250MCM)	25 (221.3)
D30M3	70 (1/0)	120 (250MCM)	25 (221.3)	70 (2/0)	120 (250MCM)	25 (221.3)
D75N4	95 (3/0)	120 (250MCM)	25 (221.3)	95 (3/0)	120 (250MCM)	25 (221.3)
D37M3	70 (2/0)	120 (250MCM)	25 (221.3)	95 (3/0)	120 (250MCM)	25 (221.3)
D90N4, D45M3	120 (4/0)	120 (250MCM)	25 (221.3)	120 (250MCM)	120 (250MCM)	25 (221.3)

Only use cables with rigid stranded wires.
 (*) Maximum cross section of the terminals
 (**) The values for ATV630...N4 catalog numbers also apply to ATV630...N4Z.

Frame Size 5S

ATV630	Supply Terminals (L1, L2, L3)			Output Terminals (U, V, W)		
	Wire Cross Section		Tightening Torque	Wire Cross Section		Tightening Torque
	Minimum	Maximum (*)	Min. to Maximum	Minimum	Maximum (*)	Rated
	mm² (AWG)	mm² (AWG)	N·m (lb.in)	mm² (AWG)	mm² (AWG)	N·m (lb.in)
D30S6	16 (6)	50 (1/0)	11.3 (100)	16 (6)	50 (1/0)	41 (360)
D37S6, D45S6	25 (4)	50 (1/0)	11.3 (100)	25 (4)	50 (1/0)	41 (360)
D55S6	35 (2)	50 (1/0)	11.3 (100)	35 (2)	50 (1/0)	41 (360)
D75S6	50 (1/0)	50 (1/0)	11.3 (100)	50 (1/0)	50 (1/0)	41 (360)

Only use cables with rigid stranded wires.
 (*) Maximum cross section of the terminals

Frame Size 5Y

ATV630	Supply Terminals (L1, L2, L3)			Output Terminals (U, V, W)		
	Wire Cross Section		Tightening Torque	Wire Cross Section		Tightening Torque
	Minimum	Maximum (*)	Min. to Maximum	Minimum	Maximum (*)	Rated
	mm² (AWG)	mm² (AWG)	N·m (lb.in)	mm² (AWG)	mm² (AWG)	N·m (lb.in)
D37Y6	25 (4)	50 (1/0)	11.3 (100)	25 (4)	50 (1/0)	41 (360)
D45Y6, D55Y6	25 (4)	50 (1/0)	11.3 (100)	25 (4)	50 (1/0)	41 (360)
D75Y6	35 (2)	50 (1/0)	11.3 (100)	35 (2)	50 (1/0)	41 (360)
D90Y6	50 (1/0)	50 (1/0)	11.3 (100)	50 (1/0)	50 (1/0)	41 (360)

Only use cables with rigid stranded wires.
 (*) Maximum cross section of the terminals

Frame Size 6

NOTE:

- If used with ring tongue: selection criteria are compatible with screw M10, width 24 mm (0.94 in.), following DIN 46234.
- If used with lugs: selection criteria are compatible with standard cable lug according to DIN 46234. You may also use lug kit DZ2FH6 and DZ2FH1 available on [schneider-electric.com](https://www.schneider-electric.com)

ATV630	Supply Terminals (L1, L2, L3)			Output Terminals (U, V, W)		
	Wire Cross Section		Tightening Torque	Wire Cross Section		Tightening Torque
	Minimum	Maximum (*)	Rated	Minimum	Maximum (*)	Rated
	mm² (AWG)	mm² (AWG)	N·m (lb.in)	mm² (AWG)	mm² (AWG)	N·m (lb.in)
C11N4	2 x 50 (2 x 1/0)	3 x 120 (2 x 300MCM)	27 (239)	2 x 50 (2 x 1/0)	3 x 120 (2 x 300MCM)	27 (239)
C13N4, D55M3	2 x 70 (2 x 2/0)	3 x 120 (2 x 300MCM)	27 (239)	2 x 70 (2 x 2/0)	3 x 120 (2 x 300MCM)	27 (239)
C16N4, D75M3	2 x 95 (2 x 3/0)	3 x 120 (2 x 300MCM)	27 (239)	2 x 95 (2 x 3/0)	3 x 120 (2 x 300MCM)	27 (239)

(*) Maximum cross section of the terminals

Frame Size 7A and 7B

ATV630	Supply Terminals (L1, L2, L3)			Output Terminals (U, V, W)		
	Wire Cross Section		Tightening Torque	Wire Cross Section		Tightening Torque
	Minimum	Maximum (*)	Rated	Minimum	Maximum (*)	Rated
	mm² (AWG)	mm² (AWG)	N·m (lb.in)	mm² (AWG)	mm² (AWG)	N·m (lb.in)
C22N4	2 x 150 (2 x 350MCM)	2 x 150 (2 x 350MCM)	41 (360)	2 x 150 (2 x 350MCM)	2 x 150 (2 x 350MCM)	41 (360)
C25N4, C31N4	4 x 185 (3 x 350MCM)	4 x 185 (3 x 350MCM)	41 (360)	4 x 185 (3 x 350MCM)	4 x 185 (3 x 350MCM)	41 (360)
(*) Maximum cross section of the terminals						

Frame Size A

ATV650	Supply Terminals (L1, L2, L3)			Output Terminals (U, V, W)		
	Wire Cross Section		Tightening Torque	Wire Cross Section		Tightening Torque
	Minimum	Maximum (*)	Rated	Minimum	Maximum (*)	Rated
	mm² (AWG)	mm² (AWG)	N·m (lb.in)	mm² (AWG)	mm² (AWG)	N·m (lb.in)
U07N4...U55N4	4 (12)	6 (10)	1.3 (11.5)	4 (12)	6 (10)	1.3 (11.5)
U07N4E...U55N4E	4	6	2.1 (18.3)	4	6	1.3 (11.5)
U75N4	4 (12)	6 (10)	1.8 (15.6)	6 (10)	10 (8)	1.8 (15.6)
U75N4E	4	6	2.1 (18.3)	6	10	1.8 (15.6)
D11N4	6 (10)	6 (10)	1.8 (15.6)	6 (10)	10 (8)	1.8 (15.6)
D11N4E	6	6	2.1 (18.3)	6	10	1.8 (15.6)
D15N4, D18N4	10 (8)	16 (6)	3.5 (30.4)	10 (8)	16 (6)	3.5 (30.4)
D15N4E, D18N4E	10	16	4.5 (40)	10	16	3.5 (30.4)
D22N4	10 (8)	16 (6)	3.5 (30.4)	16 (6)	16 (6)	3.5 (30.4)
D22N4E	10	16	4.5 (40)	16	16	3.5 (30.4)

Only use cables with solid wires or rigid stranded wires.
 (*) Maximum cross section of the terminals

Frame Size B

ATV650	Supply Terminals (L1, L2, L3)			Output Power Terminals (U, V, W)		
	Wire Cross Section		Tightening Torque	Wire Cross Section		Tightening Torque
	Minimum	Maximum (*)	Rated	Minimum	Maximum (*)	Rated
	mm² (AWG)	mm² (AWG)	N·m (lb.in)	mm² (AWG)	mm² (AWG)	N·m (lb.in)
D30N4	25 (4)	50 (1)	12 (106.2)	25 (4)	50 (1)	12 (106.2)
D30N4E	25	50	12 (106.2)	25	50	12 (106.2)
D37N4	25 (4)	50 (1)	12 (106.2)	35 (3)	50 (1)	12 (106.2)
D37N4E	25	50	12 (106.2)	35	50	12 (106.2)
D45N4	35 (3)	50 (1)	12 (106.2)	35 (2)	50 (1)	12 (106.2)
D45N4E	35	50	12 (106.2)	35	50	12 (106.2)

Only use cables with rigid stranded wires.
 (*) Maximum cross section of the terminals

Frame Size C

ATV650	Supply Terminals (L1, L2, L3)			Output Terminals (U, V, W)		
	Wire Cross Section		Tightening Torque	Wire Cross Section		Tightening Torque
	Minimum	Maximum (*)	Rated	Minimum	Maximum (*)	Rated
	mm ² (AWG)	mm ² (AWG)	N·m (lb.in)	mm ² (AWG)	mm ² (AWG)	N·m (lb.in)
D55N4	50 (1)	120 (250MCM)	25 (221.3)	70 (1/0)	120 (250MCM)	25 (221.3)
D55N4E	70	95	22.6 (200)	70	120	25 (221.3)
D75N4	70 (2/0)	120 (250MCM)	25 (221.3)	95 (3/0)	120 (250MCM)	25 (221.3)
D75N4E	95	95	22.6 (200)	95	120	25 (221.3)
D90N4	95 (3/0)	120 (250MCM)	25 (221.3)	120 (4/0)	120 (250MCM)	25 (221.3)
D90N4E	95	95	22.6 (200)	120	120	25 (221.3)
Only use cables with rigid stranded wires. (*) Maximum cross section of the terminals						

Floor Standing Drives - Normal Duty

ATV·30 and ATV·50	Supply Terminals (L1, L2, L3)		Output Terminals (U, V, W)	
	Wire Cross Section in mm ²		Wire Cross Section in mm ²	
	Recommended	Maximum (*)	Recommended	Maximum (*)
C11N4F	1 x (3 x 150 mm ²) or 2 x (3 x 70 mm ²)	1 x (3 x 185 mm ²) or 2 x (3 x 120 mm ²)	1 x (3 x 120 mm ²) or 2 x (3 x 70 mm ²)	1 x (3 x 185 mm ²) or 2 x (3 x 120 mm ²)
C13N4F	1 x (3 x 185 mm ²) or 2 x (3 x 70 mm ²)	1 x (3 x 185 mm ²) or 2 x (3 x 120 mm ²)	1 x (3 x 150 mm ²) or 2 x (3 x 70 mm ²)	1 x (3 x 185 mm ²) or 2 x (3 x 120 mm ²)
C16N4F	1 x (3 x 185 mm ²) or 2 x (3 x 95 mm ²)	1 x (3 x 185 mm ²) or 2 x (3 x 120 mm ²)	1 x (3 x 185 mm ²) or 2 x (3 x 95 mm ²)	1 x (3 x 185 mm ²) or 2 x (3 x 120 mm ²)
C20N4F	2 x (3 x 120 mm ²) or 3 x (3 x 70 mm ²)	3 x (3 x 185 mm ²) or 4 x (3 x 120 mm ²)	2 x (3 x 120 mm ²) or 3 x (3 x 70 mm ²)	3 x (3 x 185 mm ²) or 4 x (3 x 120 mm ²)
C25N4F	2 x (3 x 185 mm ²) or 3 x (3 x 95 mm ²)	3 x (3 x 185 mm ²) or 4 x (3 x 120 mm ²)	2 x (3 x 150 mm ²) or 3 x (3 x 95 mm ²)	3 x (3 x 185 mm ²) or 4 x (3 x 120 mm ²)
C31N4F	3 x (3 x 150 mm ²) or 4 x (3 x 95 mm ²)	3 x (3 x 185 mm ²) or 4 x (3 x 120 mm ²)	2 x (3 x 185 mm ²) or 4 x (3 x 120 mm ²)	3 x (3 x 185 mm ²) or 4 x (3 x 120 mm ²)
(*) Maximum cross section of the terminals				

Floor Standing Drives - Heavy Duty

ATV·30 and ATV·50	Supply Terminals (L1, L2, L3)		Output Terminals (U, V, W)	
	Wire Cross Section in mm ²		Wire Cross Section in mm ²	
	Recommended	Maximum (*)	Recommended	Maximum (*)
C11N4F	1 x (3 x 150 mm ²) or 2 x (3 x 70 mm ²)	1 x (3 x 185 mm ²) or 2 x (3 x 120 mm ²)	1 x (3 x 150 mm ²) or 2 x (3 x 70 mm ²)	1 x (3 x 185 mm ²) or 2 x (3 x 120 mm ²)
C13N4F	1 x (3 x 185 mm ²) or 2 x (3 x 70 mm ²)	1 x (3 x 185 mm ²) or 2 x (3 x 120 mm ²)	1 x (3 x 150 mm ²) or 2 x (3 x 70 mm ²)	1 x (3 x 185 mm ²) or 2 x (3 x 120 mm ²)
C16N4F	1 x (3 x 185 mm ²) or 2 x (3 x 70 mm ²)	1 x (3 x 185 mm ²) or 2 x (3 x 120 mm ²)	1 x (3 x 150 mm ²) or 2 x (3 x 70 mm ²)	1 x (3 x 185 mm ²) or 2 x (3 x 120 mm ²)
C20N4F	2 x (3 x 95 mm ²)	3 x (3 x 185 mm ²) or 4 x (3 x 120 mm ²)	1 x (3 x 185 mm ²) or 2 x (3 x 95 mm ²)	3 x (3 x 185 mm ²) or 4 x (3 x 120 mm ²)
C25N4F	2 x (3 x 120 mm ²) or 3 x (3 x 70 mm ²)	3 x (3 x 185 mm ²) or 4 x (3 x 120 mm ²)	2 x (3 x 120 mm ²) or 3 x (3 x 70 mm ²)	3 x (3 x 185 mm ²) or 4 x (3 x 120 mm ²)
C31N4F	3 x (3 x 150 mm ²) or 4 x (3 x 95 mm ²)	3 x (3 x 185 mm ²) or 4 x (3 x 120 mm ²)	2 x (3 x 185 mm ²) or 4 x (3 x 120 mm ²)	3 x (3 x 185 mm ²) or 4 x (3 x 120 mm ²)
(*) Maximum cross section of the terminals				

Wiring The Power Part

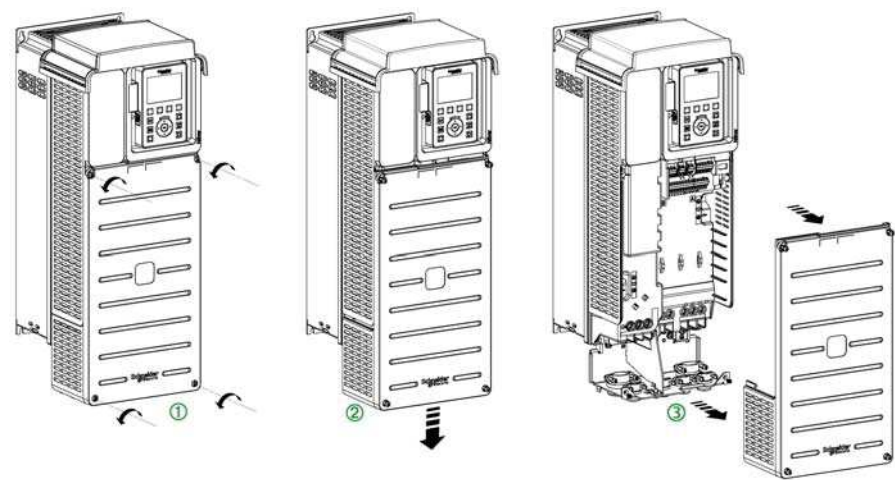
Access To The Terminals For Frame Sizes 1 to 3, IP21 Drives for 200...240 V, 380...480 V and 600 V Supply Mains

**DANGER**

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

Read and understand the instructions in **Safety Information** chapter before performing any procedure in this chapter.

Failure to follow these instructions will result in death or serious injury.



Apply the following instructions to access the terminals on **frame sizes 1 to 3** drives

Step	Action
1	Unscrew the 4 screws attaching the housing
2	Slide down the front cover
3	Remove the front cover
4	Refit the front cover on completion of wiring. Tighten the screws to 1.5 N•m / 13.3 lb-in.

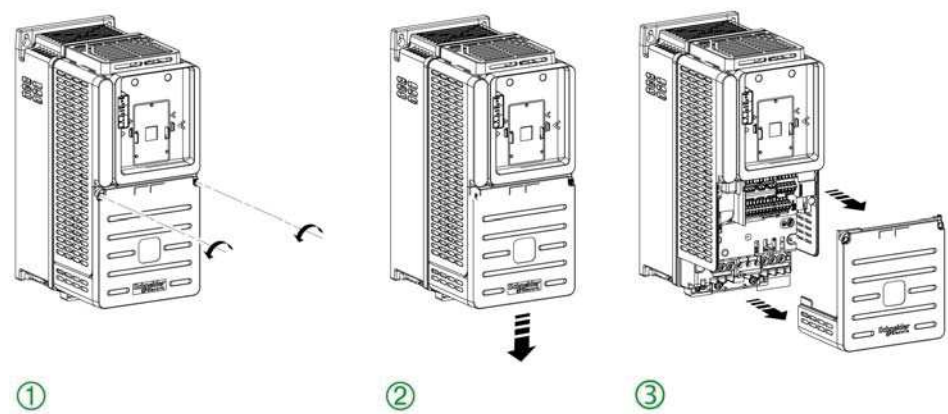
Access To The Terminals For Frame Sizes 1 to 3, IP20 Drives for cabinet integration, 380...480 V Supply Mains

DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

Read and understand the instructions in **Safety Information** chapter before performing any procedure in this chapter.

Failure to follow these instructions will result in death or serious injury.



Apply the following instructions to access the terminals on **frame sizes 1 to 3** IP20 drives

Step	Action
1	Unscrew the 2 screws attaching the housing
2	Slide down the front cover
3	Remove the front cover
4	Refit the front cover on completion of wiring. Tighten the screws to 1.5 N•m / 13.3 lb-in.

Access To The Terminals For Frame Sizes 3S and 5S, for 600 V Supply Mains

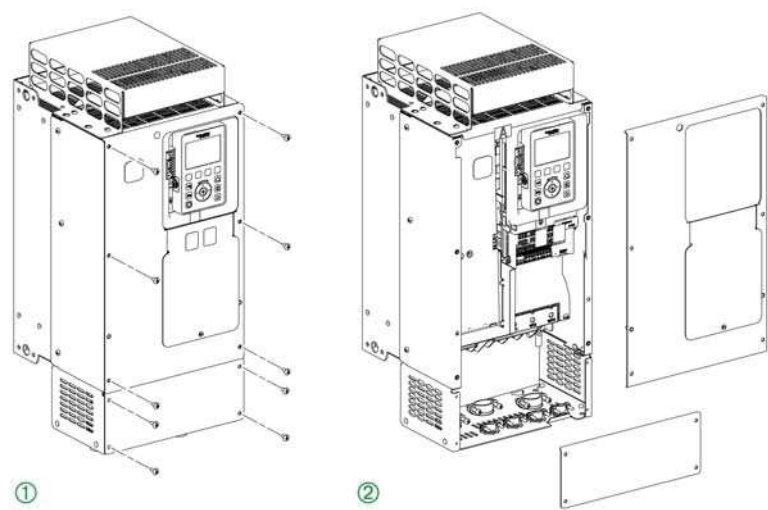


DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

Read and understand the instructions in **Safety Information** chapter before performing any procedure in this chapter.

Failure to follow these instructions will result in death or serious injury.



Apply the following instructions to access the terminals on **frame sizes 3S and 5S** drives

Step	Action
1	Unscrew the 10 screws attaching the housing
2	Remove the front covers
3	Refit the front cover on completion of wiring. Tighten the screws to 1.5 N•m / 13.3 lb-in.

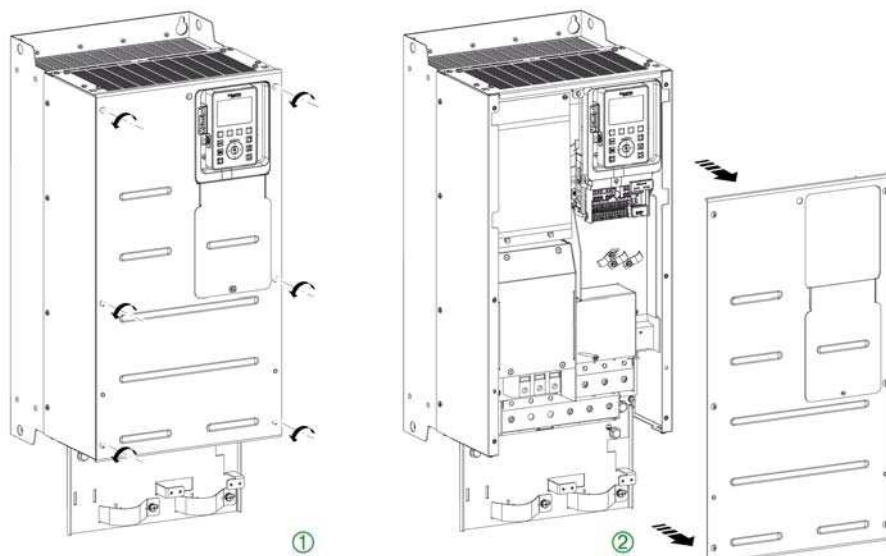
Access To The Terminals For Frame Sizes 3Y and 5Y, for 500...690 V Supply Mains

DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

Read and understand the instructions in **Safety Information** chapter before performing any procedure in this chapter.

Failure to follow these instructions will result in death or serious injury.



Apply the following instructions to access the terminals on **frame sizes 3Y and 5Y** drives

Step	Action
1	Unscrew the 6 screws attaching the housing
2	Remove the front cover
3	Refit the front cover on completion of wiring. Tighten the screws to 1.5 N•m / 13.3 lb-in.

Access To The Terminals For Frame Sizes 4 and 5, IP21 Drives

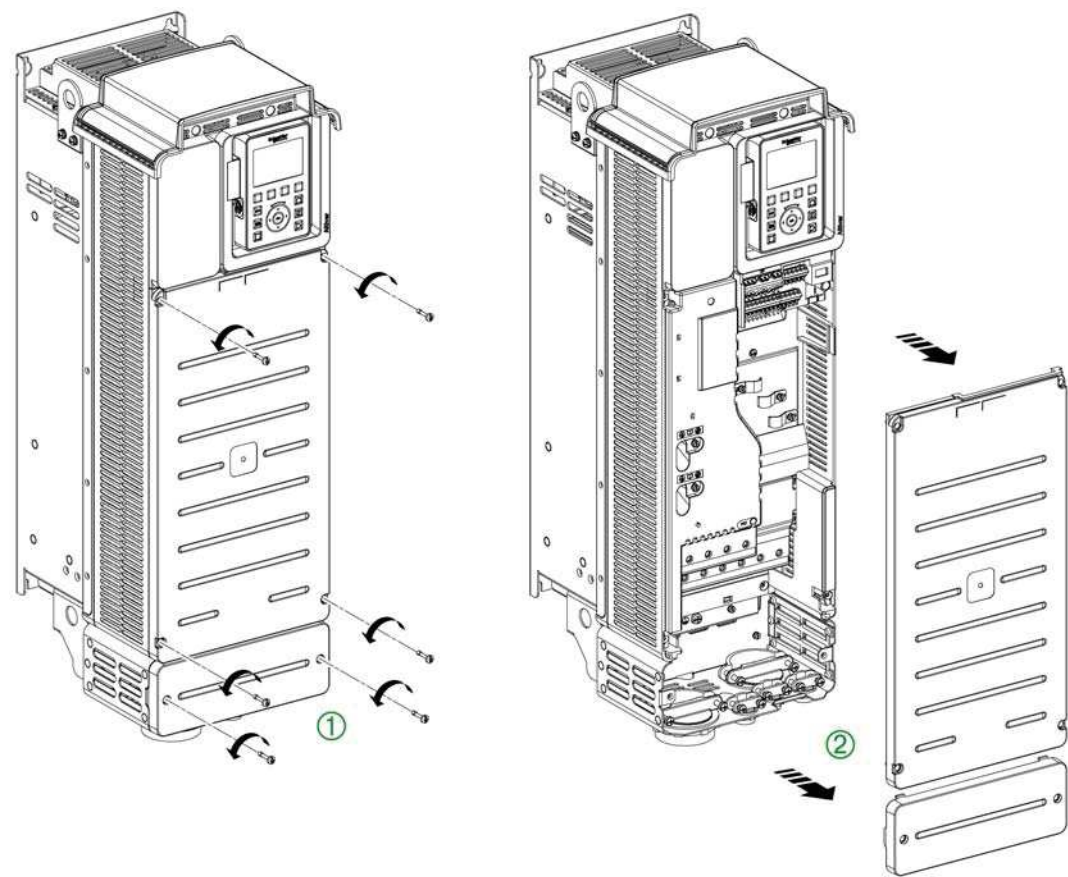


DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

Read and understand the instructions in **Safety Information** chapter before performing any procedure in this chapter.

Failure to follow these instructions will result in death or serious injury.



Apply the following instructions to access the terminals on **frame sizes 4 and 5** drives

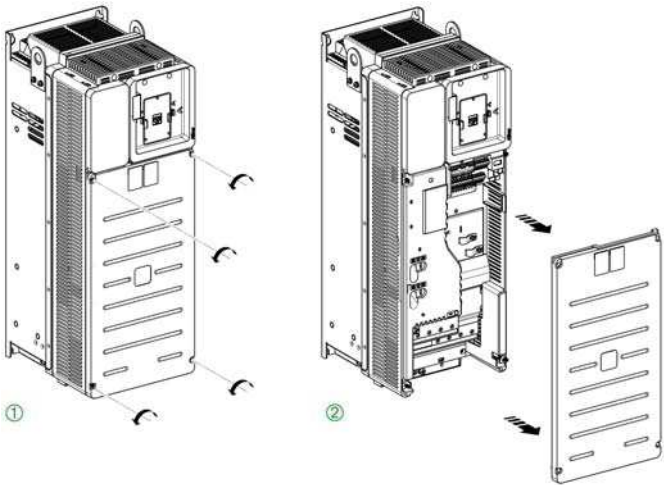
Step	Action
1	Unscrew the 6 screws (frame size 4) or the 8 screws (frame size 5) attaching the front and bottom covers
2	Remove the covers
3	On completion of wiring... ● Refit the power terminal cover ● Refit the front cover Tighten the front cover screws to... ● 1.1 N•m / 9.7 lb-in for frame size 4 ● 2.6 N•m / 23 lb-in for frame size 5

⚡ ⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

Read and understand the instructions in **Safety Information** chapter before performing any procedure in this chapter.

Failure to follow these instructions will result in death or serious injury.



Apply the following instructions to access the terminals on **frame sizes 4 and 5** drives

Step	Action
1	Unscrew the 4 screws attaching the front cover
2	Remove the cover
3	On completion of wiring refit the front cover. Tighten the front cover screws to... ● 1.1 N•m / 9.7 lb-in for frame size 4 ● 2.6 N•m / 23 lb-in for frame size 5

Access To The Terminals - Frame Size 6

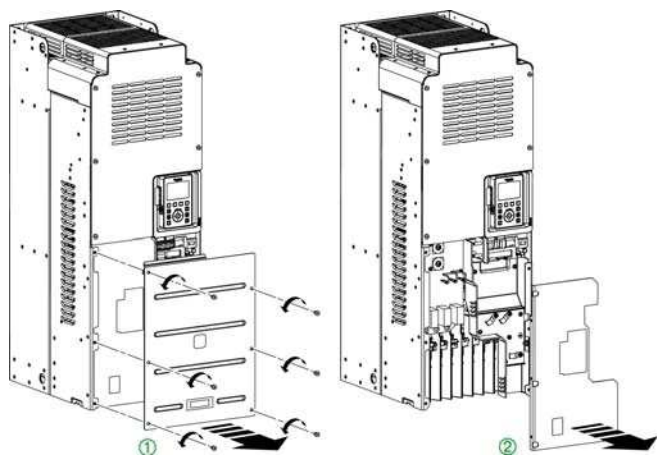


DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

Read and understand the instructions in **Safety Information** chapter before performing any procedure in this chapter.

Failure to follow these instructions will result in death or serious injury.



Apply the following instructions to access the terminals on **frame size 6** drives

Step	Action
1	Unscrew the 6 screws attaching the bottom front cover and remove it
2	Remove the terminal cover
3	Refit the front cover on completion of wiring. Tighten the screws to 3.3 N•m / 29.3 lb-in.

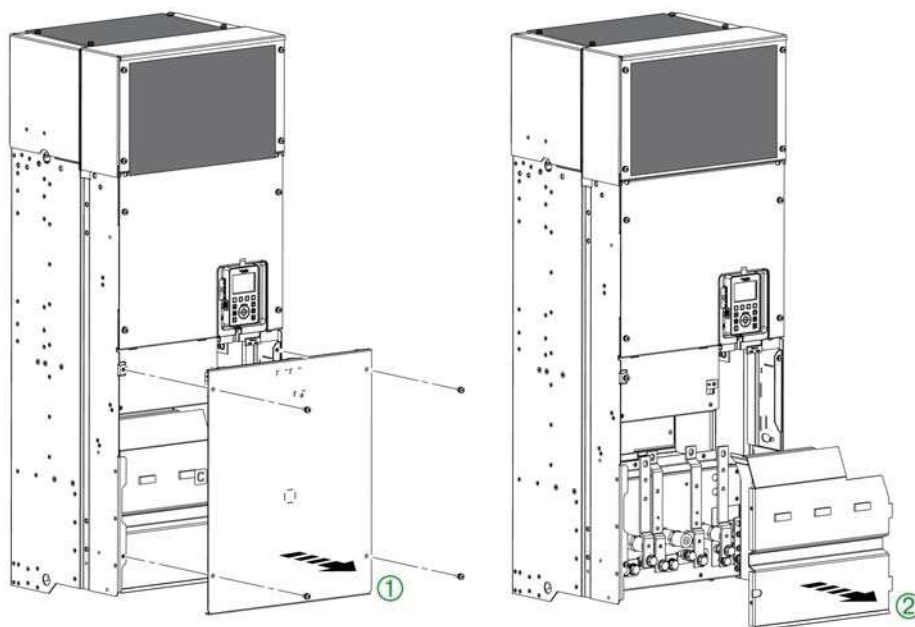
Access To The Terminals - Frame Size 7

DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

Read and understand the instructions in **Safety Information** chapter before performing any procedure in this chapter.

Failure to follow these instructions will result in death or serious injury.



Apply the following instructions to access the terminals on **frame size 7** drives

Step	Action
1	Unscrew the 4 screws attaching the bottom front cover and remove it
2	Remove the terminal cover
3	Refit the front cover on completion of wiring. Tighten the screws to 4.2 N•m / 37.17 lb-in.

Access To The Terminals For Frame Size A

DANGER

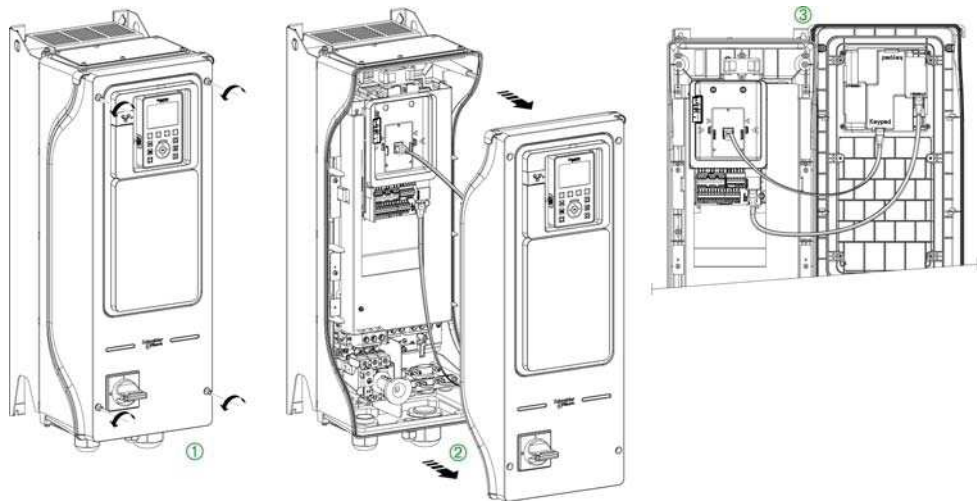
HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

Read and understand the instructions in **Safety Information** chapter before performing any procedure in this chapter.

Failure to follow these instructions will result in death or serious injury.

Apply the following instructions to access the terminals on **frame size A** drives

Step	Action
1	Unscrew the 4 captive screws attaching the housing
2	Remove the front cover
3	Attach it on the left or right side of the housing
4	Refit the front cover on completion of wiring. Tighten the screws to 1.5 N•m / 13.3 lb-in.



Access To The Terminals For Frame Sizes B and C

DANGER

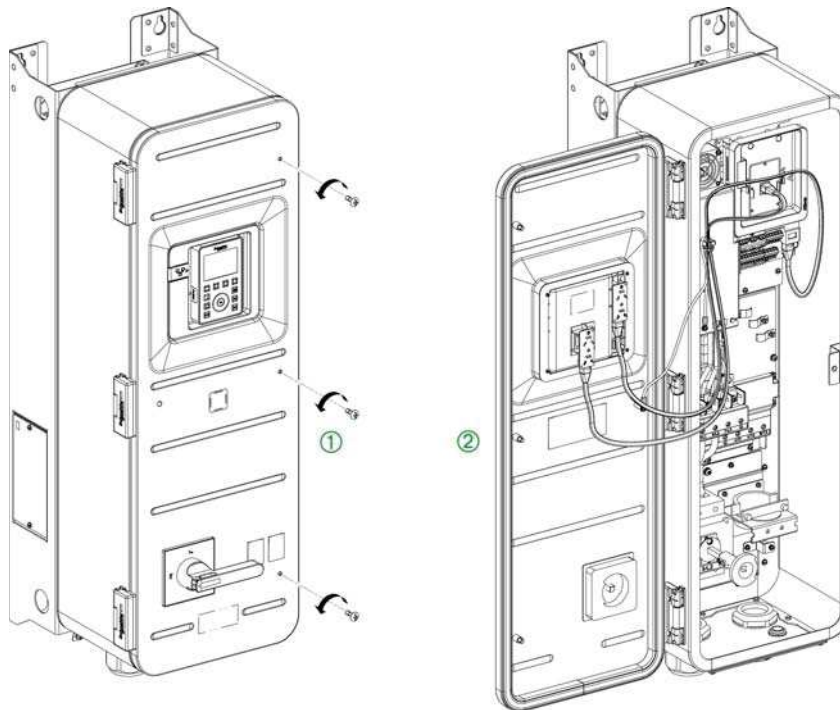
HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

Read and understand the instructions in **Safety Information** chapter before performing any procedure in this chapter.

Failure to follow these instructions will result in death or serious injury.

Apply the following instructions to access the terminals on **frame sizes B and C** drives

Step	Action
1	Unscrew the screw attaching the housing
2	Open the front cover
3	Refit the front cover on completion of wiring. Tighten the screws to 1.5 N•m / 13.3 lb-in.



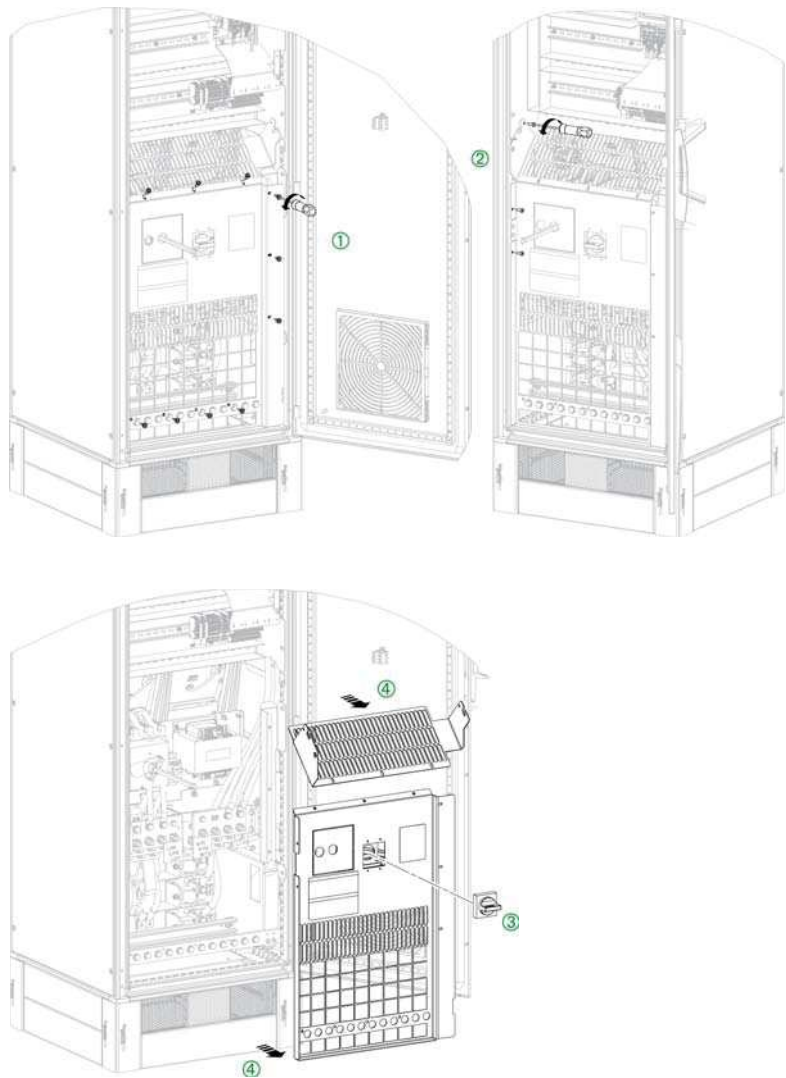


DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

Read and understand the instructions in **Safety Information** chapter before performing any procedure in this chapter.

Failure to follow these instructions will result in death or serious injury.



Apply the following instructions to access the terminals on **Floor Standing** drives

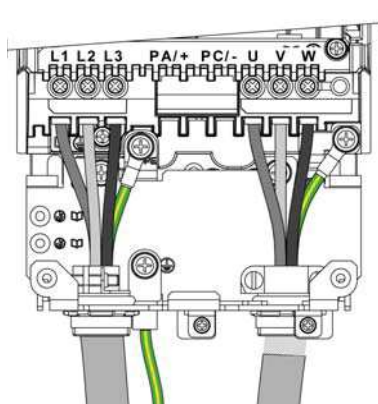
Step	Action
1	Open the enclosure. Unscrew the 9 front screws of both upper and lower covers
2	Unscrew the 3 side screws of both upper and lower covers
3	Remove the internal switch handle
4	Remove both upper and lower covers to access the power terminals.
5	On completion of wiring... ● Refit both upper and lower covers ● Tighten the screws to 5.5 N•m / 48.6 lb-in ● Refit the internal switch handle

Frame Size 1 and Frame Size A Cable Path

Correspondence Table Between Frame Size A and Frame Size 1

Power Rating		Frame Size A Drives	Frame Size 1 Drives
kW	HP	Catalog Number	Catalog Number
0.75	1	ATV650U07N4•	ATV630U07N4
1.5	2	ATV650U15N4•	ATV630U15N4
2.2	3	ATV650U22N4•	ATV630U22N4
3	-	ATV650U30N4•	ATV630U30N4
4	5	ATV650U40N4•	ATV630U40N4
5.5	7 ^{1/2}	ATV650U55N4•	ATV630U55N4

Wire the power cables as shown below (example for wall mounting drives).



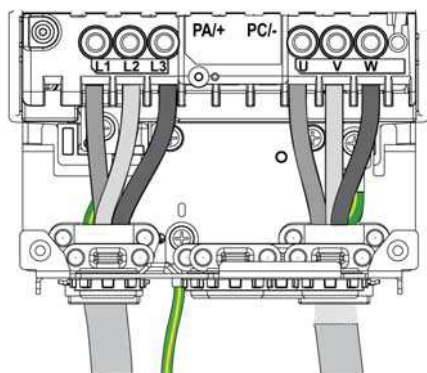
NOTE: PA/+ and PC/- terminals are used only to measure the DC Bus voltage and are not intended to be wired for an external use.

Frame Size 2 and Frame Size A Cable Path

Correspondence Table Between Frame Size A and Frame Size 2

Power Rating		Frame Size A Drives	Frame Size 2 Drives
kW	HP	Catalog Number	Catalog Number
7.5	10	ATV650U75N4•	ATV630U75N4
11	15	ATV650D11N4•	ATV630D11N4

Wire the power cables as shown below (example for wall mounting drives).



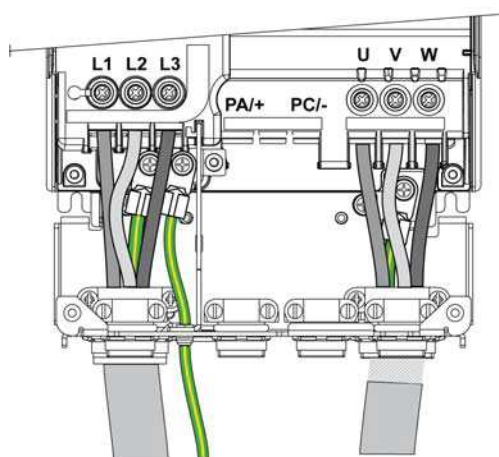
NOTE: PA/+ and PC/- terminals are used only to measure the DC Bus voltage and are not intended to be wired for an external use.

Frame Size 3 and Frame Size A Cable Path

Correspondence Table Between Frame Size A and Frame Size 3

Power Rating		Frame Size A Drives	Frame Size 3 Drives
kW	HP	Catalog Number	Catalog Number
15	20	ATV650D15N4•	ATV630D15N4
18.5	25	ATV650D18N4•	ATV630D18N4
22	30	ATV650D22N4•	ATV630D22N4

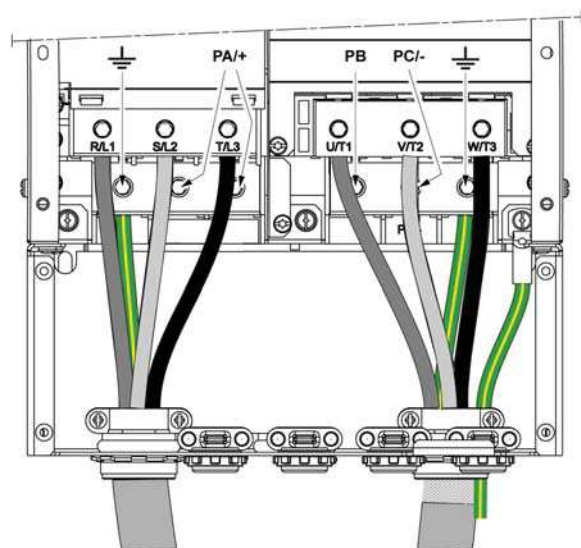
Wire the power cables as shown below (example for wall mounting drives).



NOTE: PA/+ and PC/- terminals are used only to measure the DC Bus voltage and are not intended to be wired for an external use.

Frame Size 3S Cable Path

Wire the power cables as shown below.

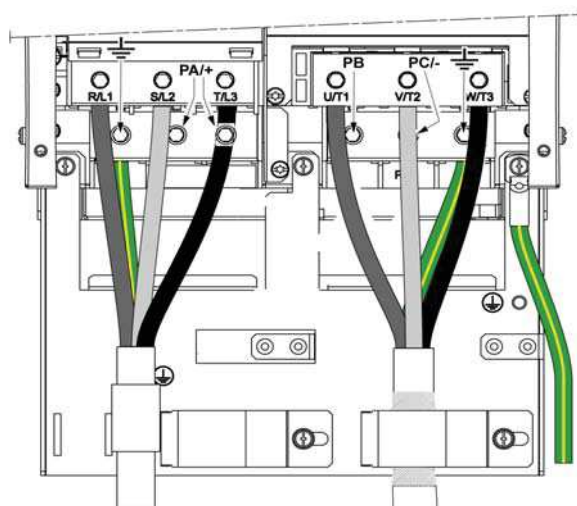


NOTE: PA/+ and PC/- terminals are used only to measure the DC Bus voltage and are not intended to be wired for an external use.

Frame Size 3Y Cable Path

NOTE: Due to accessible live parts on their lower part, these drives should be installed in enclosures or located behind enclosures or barriers, which comply at least with the requirements of IP2*, as per IEC61800-5-1.

Wire the power cables as shown below.



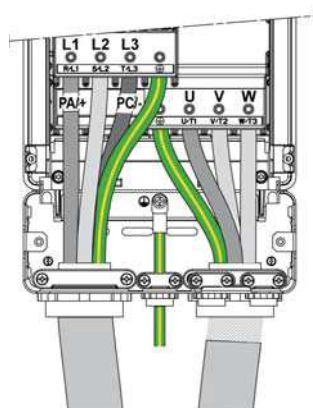
NOTE: PA/+ and PC/- terminals are used only to measure the DC Bus voltage and are not intended to be wired for an external use.

Frame Size 4 and Frame Size B Cable Path

Correspondence Table Between Frame Size B and Frame Size 4

Power Rating		Frame Size B Drives	Frame Size 4 Drives
kW	HP	Catalog Number	Catalog Number
30	40	ATV650D30N4•	ATV630D30N4
37	50	ATV650D37N4•	ATV630D37N4
45	60	ATV650D45N4•	ATV630D45N4

Wire the power cables as shown below (example for wall mounting drives).



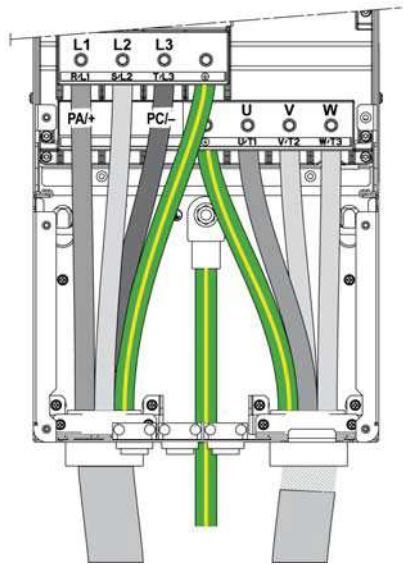
NOTE: PA/+ and PC/- terminals are used only to measure the DC Bus voltage and are not intended to be wired for an external use.

Frame Size 5 and Frame Size C Cable Path

Correspondence Table Between Frame Size C and Frame Size 5

Power Rating		Frame Size A Drives	Frame Size 5 Drives
kW	HP	Catalog Number	Catalog Number
55	75	ATV650D55N4•	ATV630D55N4
75	100	ATV650D75N4•	ATV630D75N4
90	125	ATV650D90N4•	ATV630D90N4

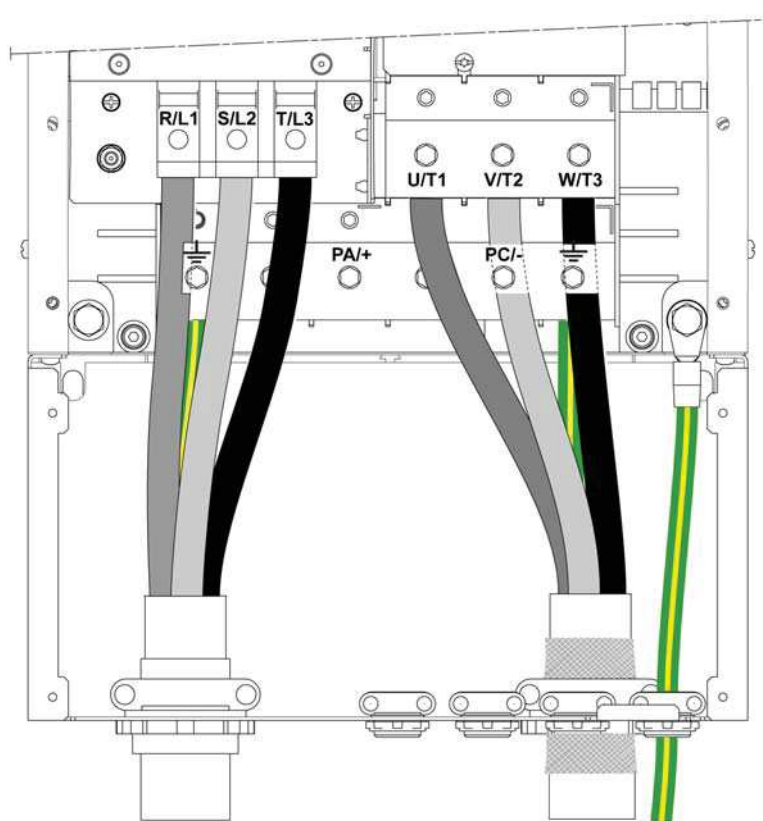
Wire the power cables as shown below (example for wall mounting drives).



NOTE: PA/+ and PC/- terminals are used only to measure the DC Bus voltage and are not intended to be wired for an external use.

Frame Size 5S Cable Path

Wire the power cables as shown below.

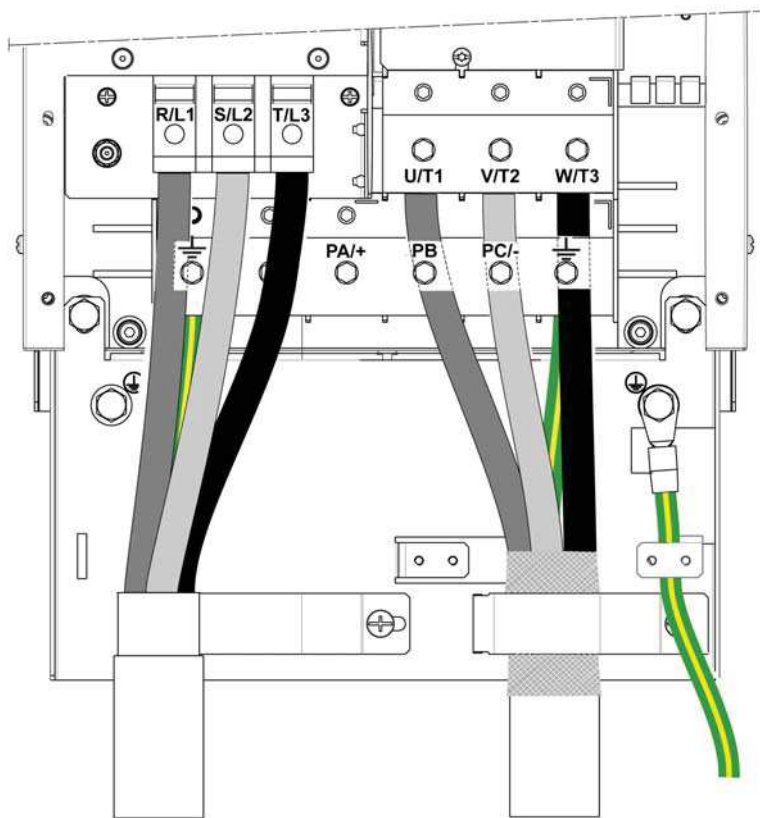


NOTE: PA/+ and PC/- terminals are used only to measure the DC Bus voltage and are not intended to be wired for an external use.

Frame Size 5Y Cable Path

NOTE: Due to accessible live parts on their lower part, these drives should be installed in enclosures or located behind enclosures or barriers, which comply at least with the requirements of IP2*, as per IEC61800-5-1.

Wire the power cables as shown below.



NOTE: PA/+ and PC/- terminals are used only to measure the DC Bus voltage and are not intended to be wired for an external use.

Frame Size 6 Cable Path

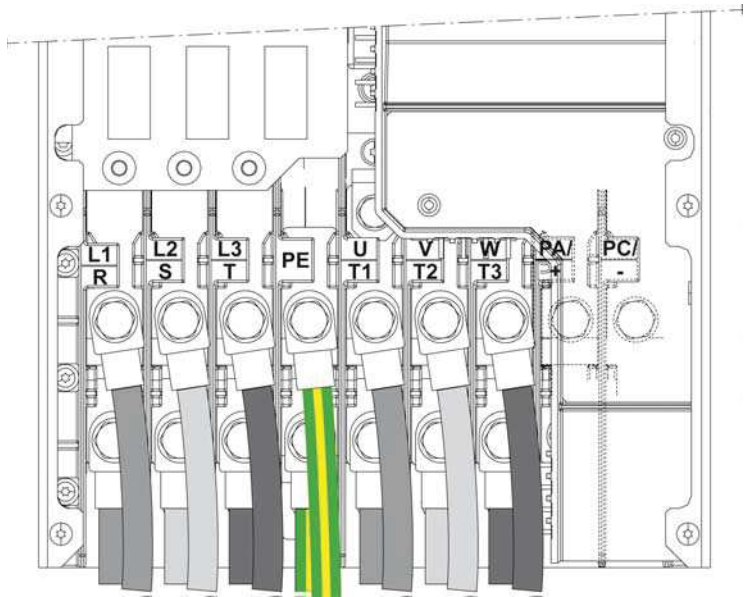
NOTE: Due to accessible live parts on their lower part, these drives should be installed in enclosures or located behind enclosures or barriers, which comply at least with the requirements of IP2*, as per IEC61800-5-1.

Use 1 or 2 connection cables per terminal, depending on the cable characteristics. Refer to standard IEC 60364-5-52 for cable selection. Permissible cable cross sections are given in the Power Terminals section (see page 140).

For 2 connection cable wiring:

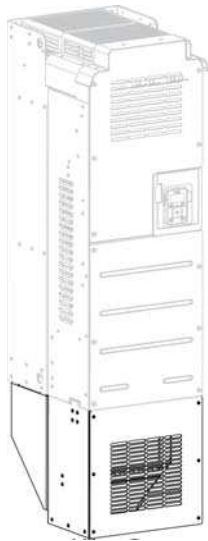
Step	Action
1	Connect the first cable on the lower terminal
2	Connect the other cable on the upper terminal

For 2 cable connection, wire the power cables as shown below.



NOTE: PA/+ and PC/- terminals are used only to measure the DC Bus voltage and are not intended to be wired for an external use.

NOTE: A conduit box is available as an option. It enables an IP21 degree of protection at the bottom side of the drive. See www.schneider-electric.com

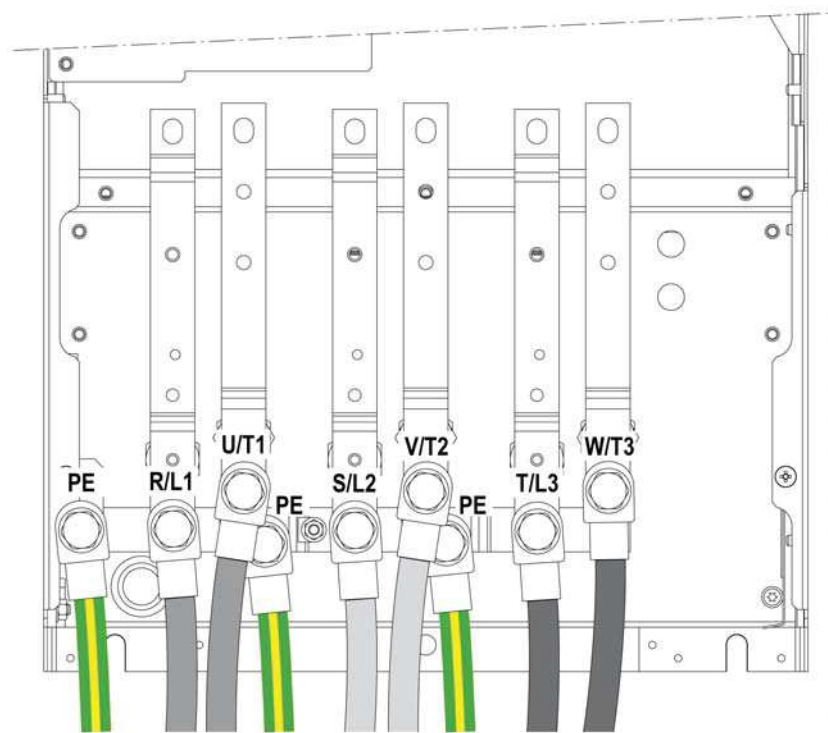


Frame Size 7A Cable Path

NOTE: Due to accessible live parts on their lower part, these drives should be installed in enclosures or located behind enclosures or barriers, which comply at least with the requirements of IP2*, as per IEC61800-5-1.

Refer to standard IEC 60364-5-52 for cable selection. Permissible cable cross sections are given in the Power Terminals section (see page 140).

Wire the power cables as shown below.



Cable wiring:

Step	Action
1	Connect the first cable on the lower terminal
2	Connect the other cable on the upper terminal

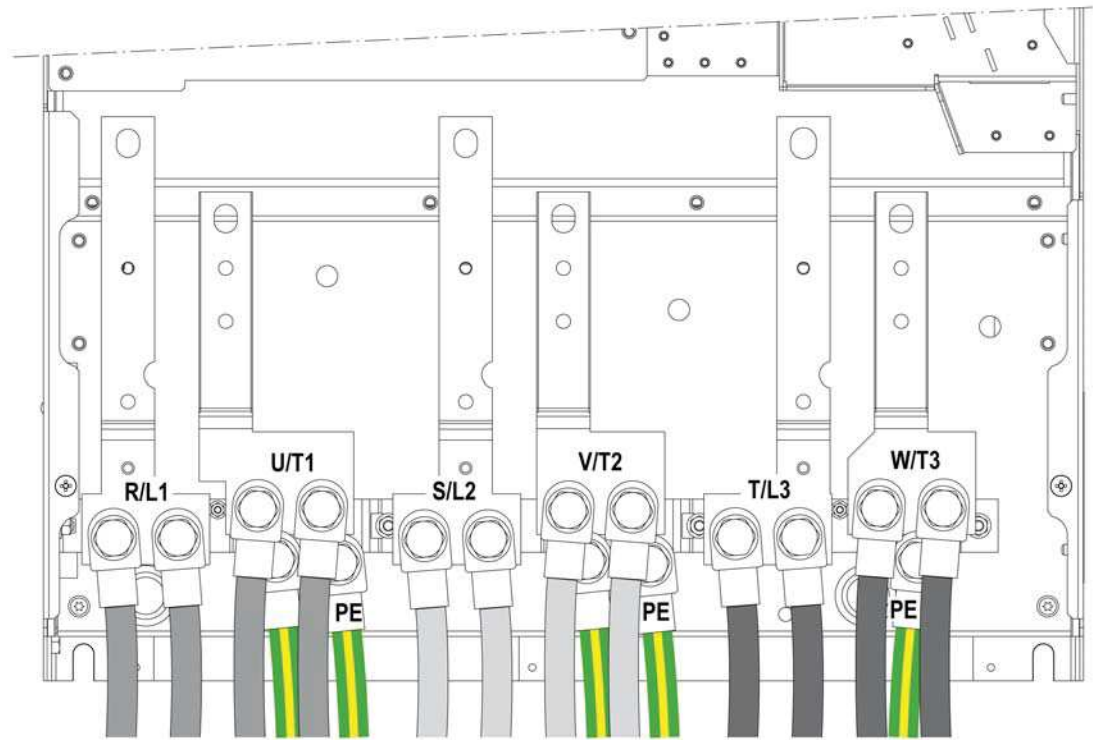
NOTE: Wiring of the DC chokes is described in the Installing the DC Choke section (see page 118).

Frame Size 7B Cable Path

NOTE: Due to accessible live parts on their lower part, these drives should be installed in enclosures or located behind enclosures or barriers, which comply at least with the requirements of IP2*, as per IEC61800-5-1.

Refer to standard IEC 60364-5-52 for cable selection. Permissible cable cross sections are given in the Power Terminals section (see page 140).

Wire the power cables as shown below.



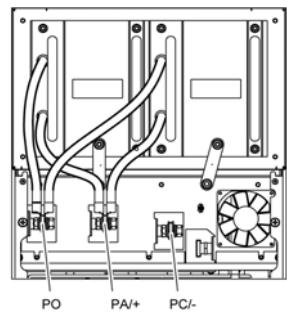
Cable wiring:

Step	Action
1	Connect the first cable on the lower terminal
2	Connect the other cable on the upper terminal

NOTE: Wiring of the DC chokes is described in the Installing the DC Choke section (see page 118).

Frame Size 7A and 7B DC Bus terminals

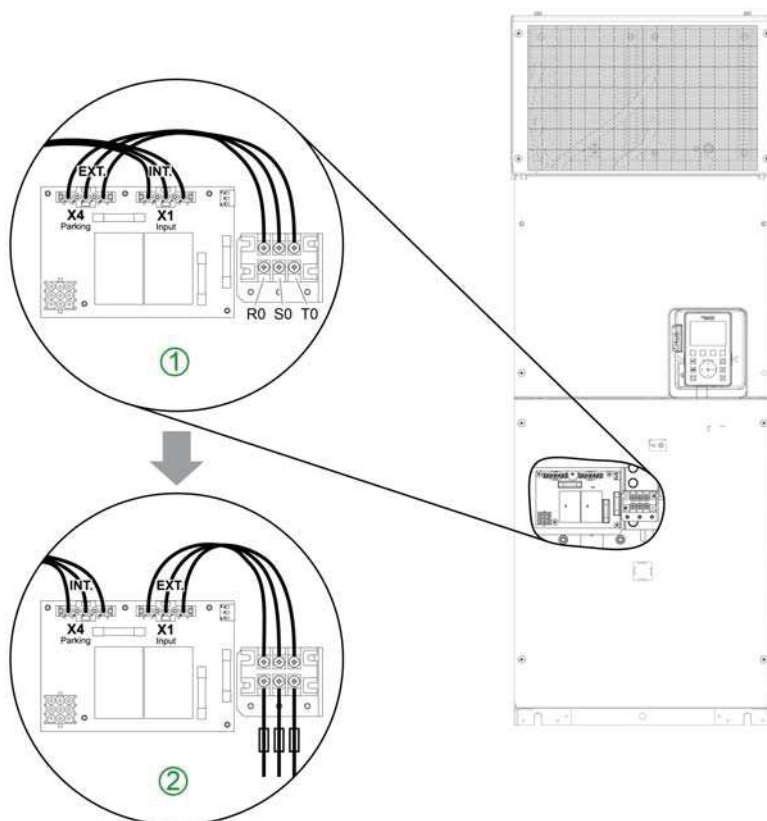
The figure below shows where to find DC Bus terminals (PA/+, PC/-).



NOTE: PA/+ and PC/- terminals are used only to measure the DC Bus voltage and are not intended to be wired for an external use.

Connecting Fans For a Separate Power Supply on Frame Sizes 7A and 7B

In order to remove the link between the fans and power supply terminals R/L1, S/L2, T/L3 and relocate it at terminals R0, S0, T0. Cross the connectors X1 and X4 as indicated on the diagram below.



- ① Factory wiring: Fans powered internally by R/L1, S/L2, T/L3.
- ② Modification for fans powered externally by R0, S0, T0.

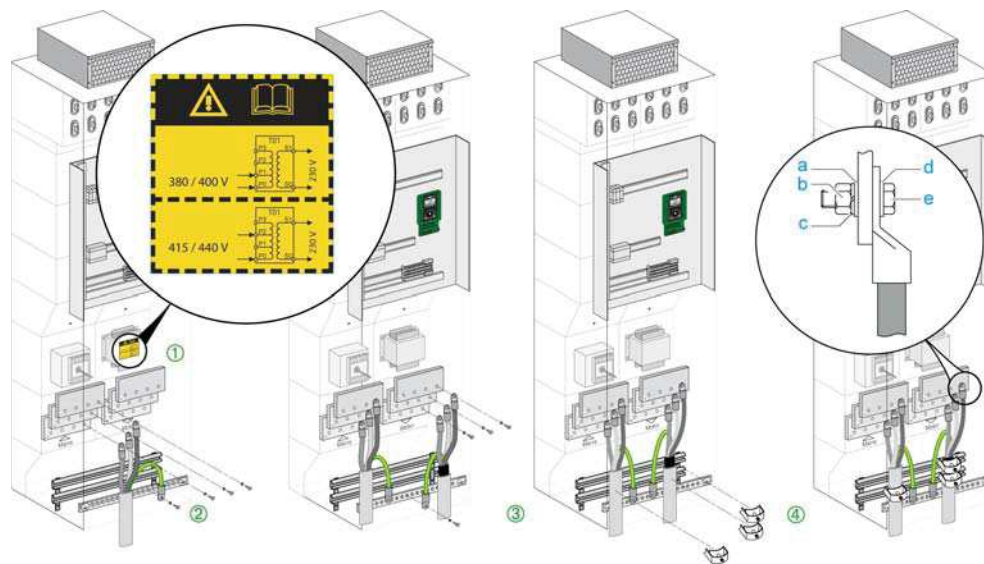
Floor Standing Drives - Wiring Procedure

Permissible cable cross sections and tightening torques are given in the Power Terminals section ([see page 140](#)).

NOTE: The cable length from the bottom of the drive to the terminals is between 350 mm (13.8 in.) and 420 mm (16.6 in.), depending on the rank of the terminal.

Perform the following instructions to connect the power part:

Step	Action
1	Verify the input mains supply voltage. The drive transformer is factory set to suit a 380/400 Vac mains supply input voltage. If the supply mains voltage is between 415 and 440 Vac, disconnect P1 transformer terminal and connect the wire to the P2 terminal.
2	Connect the supply mains cable lugs to the power input terminals L1, L2, L3. Attach the PE cable lug to the Ground bar.
3	Connect the motor cable lugs to the power output terminals U, V, W. Attach the PE cable lug to the Ground bar.
4	Position the lower cable clamp on the insulated part of the supply mains cable and attach it to the lower rail. Position the upper cable clamp on the cable shielding of the motor cable and attach it to the upper rail. Position the lower cable clamp on the insulated part of the motor cable and attach it to the lower rail.



- a flat washer
- b nut
- c spring washer
- d flat washer
- e M12 screw