

PowerXL DM1 and DM1 Pro series VFD

(Original instructions)

Instruction Leaflet
Montageanweisung
Notice d'installation
Instrucciones de montaje
Istruzioni per il montaggio
安装说明
Инструкция по монтажу

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Montagevejledning
Οδηγίες εγκατάστασης
Instruções de montagem
Monteringsanvisning
Asennusohje
Návod k montáži

Paigaldusjuhend
Szerelési utasítás
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Návod na montáž

Μонтажни инструкции
Instrucţiuni de montaj
Upute za montažu
Montaj talimatı
Інструкція з монтажу
منشور التعليمات

 **(en) Electric current! Danger to life!**
Only skilled or instructed persons may carry out the following operations.

(de) Lebensgefahr durch elektrischen Strom!
Nur Elektrofachkräfte und elektrotechnisch unterwiesene Personen dürfen die im Folgenden beschriebenen Arbeiten ausführen.

(fr) Tension électrique dangereuse !
Seules les personnes qualifiées et averties doivent exécuter les travaux ci-après.

(es) ¡Corriente eléctrica! ¡Peligro de muerte!
El trabajo a continuación descrito debe ser realizado por personas cualificadas y advertidas.

(it) Tensione elettrica: Pericolo di morte!
Solo persone abilitate e qualificate possono eseguire le operazioni di seguito riportate.

(zh) 触电危险!
只允许专业人员和受过专业训练的人员进行下列工作。

(ru) Электрический ток! Опасно для жизни!
Только специалисты или проинструктированные лица могут выполнять следующие операции.

(nl) Levensgevaar door elektrische stroom!
Uitsluitend deskundigen in elektriciteit en elektrotechnisch geïnstrueerde personen is het toegestaan, de navolgend beschreven werkzaamheden uit te voeren.

(da) Livsfare på grund af elektrisk strøm!
Kun uddannede el-installatører og personer der er instruerede i elektrotekniske arbejdsopgaver, må udføre de nedenfor anførte arbejder.

(el) Προσοχή, κίνδυνος ηλεκτροπληξίας!
Οι εργασίες που αναφέρονται στη συνέχεια θα πρέπει να εκτελούνται μόνο από ηλεκτρολόγους και ηλεκροτεχνίτες.

(pt) Perigo de vida devido a corrente eléctrica!
Apenas electricistas e pessoas com formação electrotécnica podem executar os trabalhos que a seguir se descrevem.

(sv) Livsfara genom elektrisk ström!
Endast utbildade elektriker och personer som undervisats i elektroteknik får utföra de arbeten som beskrivs nedan.

(fi) Hengenvaarallinen jännite!
Vain pätevät sähköasentajat ja opastusta saaneet henkilöt saavat suorittaa seuraavat työt.

(cs) Nebezpečí úrazu elektrickým proudem!
Níže uvedené práce směji provádět pouze osoby s elektrotechnickým vzděláním.

(et) Eluohutlik! Elektrilöögioht!
Järgnevalt kirjeldatud töid tohib teostada ainult elektriala spetsialist või elektrotehnilise instrueerimise läbinud personal.

(hu) Életveszély az elektromos áram révén!
Csak elektromos szakemberek és elektrotechnikában képzett személyek végezhetik el a következőkben leírt munkákat.

(lv) Elektriskā strāva apdraud dzīvību!
Tālāk aprakstītos darbus drīkst veikt tikai elektrospeciālisti un darbam ar elektrotehniskām iekārtām instruētās personas!

(lt) Pavojus gyvybei dėl elektros srovės!
Tik elektrikai ir elektrotechnikos specialistai gali atlikti žemiau aprašytus darbus.

(pl) Porażenie prądem elektrycznym stanowi zagrożenie dla życia!
Opisane poniżej prace mogą przeprowadzać tylko wykwalifikowani elektrycy oraz osoby odpowiednio poinstruowane w zakresie elektrotechniki.

(sl) Življenjska nevarnost zaradi električnega toka!
Spodaj opisana dela smejo izvajati samo elektrostrokovnjaki in elektrotehnično poučene osebe.

(sk) Nebezpečenstvo ohrozenia života elektrickým prúdom!
Práce, ktoré sú nižšie opísané, smú vykonávať iba elektrodoborníci a osoby s elektrotechnickým vzdelaním.

(bg) Опасност за живота от електрически ток!
Операциите, описани в следващите раздели, могат да се извършват само от специалисти-електротехници и инструктиран електротехнически персонал.

(ro) Atenție! Pericol electric!
Toate lucrările descrise trebuie efectuate numai de personal de specialitate calificat și de persoane cu cunoștințe profunde în electrotehnică.

(hr) Opasnost po život uslijed električne struje!
Radove opisane u nastavku smiju obavljati samo stručni električari i osobe koje su prošle elektrotehničku obuku.

(tr) Elektrik akımı! Hayati tehlike!
Aşağıdaki işlemleri yalnızca kalifiye veya eğitimli kişiler gerçekleştirebilir.

(uk) Електричний струм! Небезпечно для життя!
Виконувати означені далі операції дозволяється тільки кваліфікованим особам, що пройшли інструктаж.

(ar) تحذير! تيار كهربائي! خطر موت!
لا تتم اعمال الصيانة والتركيب الا من قبل العاملين المدربين!



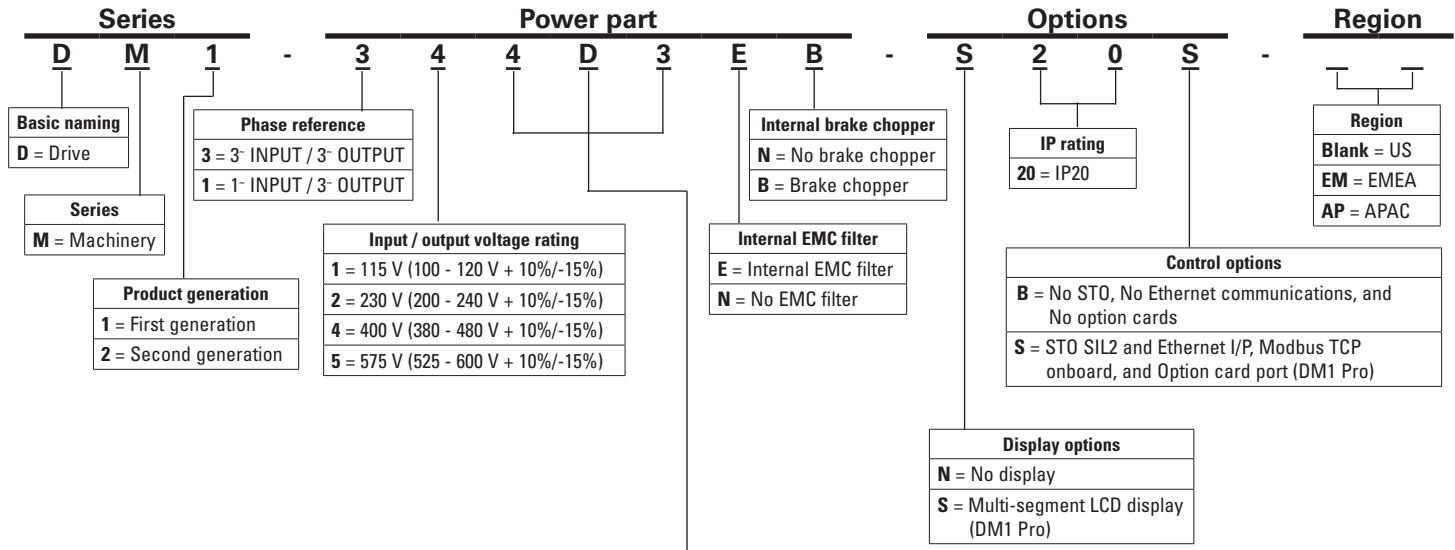
[Eaton.com/EcoDesign-VFD](https://www.eaton.com/EcoDesign-VFD)

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EAT•N

Powering Business Worldwide

Catalog numbering system



Output current rating (single phase input)		Output current rating (three phase input)		
100 - 120 v	200 - 240 v	200 - 240 v	380 - 480 v	525 - 600 v
1D6 = 1.6 A, 0.18 kW, 0.25 hp	1D6 = 1.6 A, 0.18 kW, 0.25 hp	1D6 = 1.6 A, 0.18 kW, 0.25 hp	1D5 = 1.5 A, 0.37 kW, 0.50 hp	4D5 = 4.5 A, 2.20 kW, 3.00 hp
3D0 = 3.0 A, 0.37 kW, 0.50 hp	3D0 = 3.0 A, 0.37 kW, 0.50 hp	3D0 = 3.0 A, 0.37 kW, 0.50 hp	2D2 = 2.2 A, 0.75 kW, 1.00 hp	7D5 = 7.5 A, 3.00 kW, 5.00 hp
4D8 = 4.8 A, 0.75 kW, 1.00 hp	4D8 = 4.8 A, 0.75 kW, 1.00 hp	4D8 = 4.8 A, 0.75 kW, 1.00 hp	4D3 = 4.3 A, 1.50 kW, 2.00 hp	010 = 10.0 A, 5.50 kW, 7.50 hp
6D9 = 6.9 A, 1.10 kW, 1.50 hp	7D8 = 7.8 A, 1.50 kW, 2.00 hp	7D8 = 7.8 A, 1.50 kW, 2.00 hp	5D6 = 5.6 A, 2.20 kW, 3.00 hp	013 = 13.5 A, 7.50 kW, 10.00 hp
	011 = 11.0 A, 2.20 kW, 3.00 hp	011 = 11.0 A, 2.20 kW, 3.00 hp	7D6 = 7.6 A, 3.00 kW, 5.00 hp	018 = 18.0 A, 11.00 kW, 15.00 hp
	017 = 17.5 A, 4.00 kW, 5.00 hp	017 = 17.5 A, 4.00 kW, 5.00 hp	012 = 12.0 A, 5.50 kW, 7.50 hp	022 = 22.0 A, 15.00 kW, 20.00 hp
		025 = 25.3 A, 5.50 kW, 7.50 hp	016 = 16.0 A, 7.50 kW, 10.00 hp	
		032 = 32.2 A, 7.50 kW, 10.00 hp	023 = 23.0 A, 11.00 kW, 15.00 hp	
		048 = 48.3 A, 11.00 kW, 15.00 hp	031 = 31.0 A, 15.00 kW, 20.00 hp	
			038 = 38.0 A, 18.50 kW, 25.00 hp	

Shading legend

FR1	FR2	FR3	FR4
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DM1 option cards list:

- 1) DXM-NET-PROFIBUS : DM1 PROFIBUS communications card
- 2) DXM-NET-CANOPEN : DM1 CANOPEN communication card
- 3) DXG-NET-SWD-IP20 DG1: Smartwire communication card and module IP20
- 4) DXG-NET-SWD-IP54 DG1 : Smartwire communication card and module IP54

en Dimensions and weights	nl Afmetingen en gewichten	et Mõõtmed ja kaalud	bg Размери и тегло
de Abmessungen und Gewichte	da Mål og vægt	hu Méretek és Súly	ro Dimensiuni și greutate
fr Encombrements et poids	el Διαστάσεις και βάρη	lv Izmēri un svars	hr Dimenzije i težina
es Dimensiones y pesos	pt Medições e pesos	lt Matmenys ir svoriai	tr Boyutlar ve ağırlıklar
it Dimensioni e pesi	sv Dimensioner och vikter	pl Wymiary i masy	uk Габаритні розміри й вага
zh 尺寸和重量	fi Mitat ja painot	sl Dimenzije in teže	ar الأبعاد والأوزان
ru Размеры и вес	cs Rozměry a hmotnosti	sk Rozmery a hmotnosti	

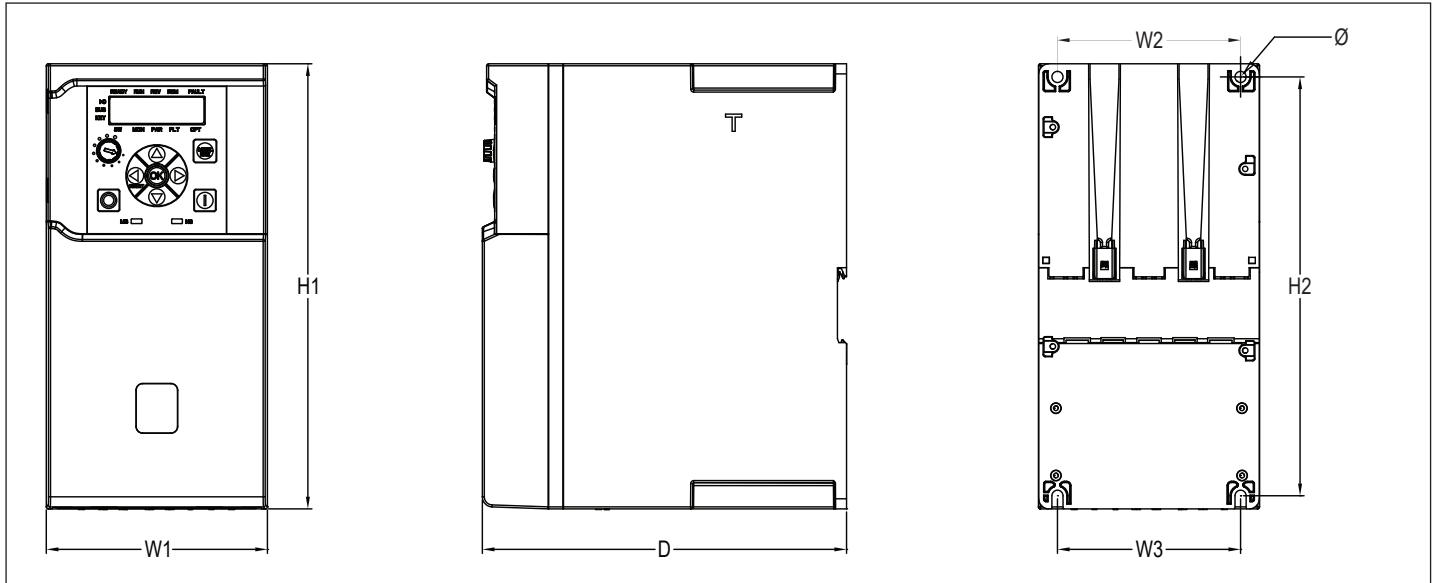


Table 1. Approximate mounting dimensions in inches (mm).

Input voltage	Frame size	Drive catalog number	Output rating		Dimensions			W1 in. (mm)	W2 in. (mm)	W3 in. (mm)	Φ in. (mm)	Weight lb (kg)
			CT/IH current amps	VT/IL current amps	D in. (mm)	H1 in. (mm)	H2 in. (mm)					
100 Vac to 120 Vac 50/60 Hz 1 phase	FR1	DM1-111D6...	1.6	2.5	7.09 (180)	5.98 (152)	5.51 (140)	2.83 (72)	2.26 (57.5)	2.26 (57.5)	0.20 (5.2)	2.6 (1.2)
		DM1-113D0...	3	4.8	7.09 (180)	5.98 (152)	5.51 (140)	2.83 (72)	2.26 (57.5)	2.26 (57.5)	0.20 (5.2)	2.6 (1.2)
	FR2	DM1-114D8...	4.8	6.9	7.09 (180)	8.66 (220)	8.15 (207)	4.29 (109)	3.56 (90.5)	3.56 (90.5)	0.22 (5.5)	5.7 (2.6)
		DM1-116D9...	6.9	7.8	7.09 (180)	8.66 (220)	8.15 (207)	4.29 (109)	3.56 (90.5)	3.56 (90.5)	0.22 (5.5)	5.7 (2.6)
200 Vac to 240 Vac 50/60 Hz 1 phase	FR1	DM1-121D6...	1.6	2.5	7.09 (180)	5.98 (152)	5.51 (140)	2.83 (72)	2.26 (57.5)	2.26 (57.5)	0.20 (5.2)	2.6 (1.2)
		DM1-123D0...	3	4.8	7.09 (180)	5.98 (152)	5.51 (140)	2.83 (72)	2.26 (57.5)	2.26 (57.5)	0.20 (5.2)	2.6 (1.2)
		DM1-124D8...	4.8	7.8	7.09 (180)	5.98 (152)	5.51 (140)	2.83 (72)	2.26 (57.5)	2.26 (57.5)	0.20 (5.2)	2.6 (1.2)
		DM1-127D8...	7.8	11	7.09 (180)	8.66 (220)	8.15 (207)	4.29 (109)	3.56 (90.5)	3.56 (90.5)	0.22 (5.5)	5.7 (2.6)
	FR2	DM1-12011...	11	17.5	7.09 (180)	8.66 (220)	8.15 (207)	4.29 (109)	3.56 (90.5)	3.56 (90.5)	0.22 (5.5)	5.7 (2.6)
		DM1-12017...	17.5	25.3	7.09 (180)	10.24 (260)	9.72 (247)	5.12 (130)	4.57 (116)	4.57 (116)	0.22 (5.5)	8.2 (3.7)
	FR3	DM1-321D6...	1.6	2.5	7.09 (180)	5.98 (152)	5.51 (140)	2.83 (72)	2.26 (57.5)	2.26 (57.5)	0.20 (5.2)	2.6 (1.2)
200 Vac to 240 Vac 50/60 Hz 3 phase	FR1	DM1-323D0...	3	4.8	7.09 (180)	5.98 (152)	5.51 (140)	2.83 (72)	2.26 (57.5)	2.26 (57.5)	0.20 (5.2)	2.6 (1.2)
		DM1-324D8...	4.8	7.8	7.09 (180)	5.98 (152)	5.51 (140)	2.83 (72)	2.26 (57.5)	2.26 (57.5)	0.20 (5.2)	2.6 (1.2)
		DM1-327D8...	7.8	11	7.09 (180)	5.98 (152)	5.51 (140)	2.83 (72)	2.26 (57.5)	2.26 (57.5)	0.20 (5.2)	2.6 (1.2)
		DM1-32011...	11	17.5	7.09 (180)	8.66 (220)	8.15 (207)	4.29 (109)	3.56 (90.5)	3.56 (90.5)	0.22 (5.5)	5.7 (2.6)
	FR2	DM1-32017...	17.5	25.3	7.09 (180)	8.66 (220)	8.15 (207)	4.29 (109)	3.56 (90.5)	3.56 (90.5)	0.22 (5.5)	5.7 (2.6)
		DM1-32025...	25.3	32.2	7.09 (180)	10.24 (260)	9.72 (247)	5.12 (130)	4.57 (116)	4.57 (116)	0.22 (5.5)	8.2 (3.7)
	FR4	DM1-32032...	32.2	48.3	7.68 (195)	11.81 (300)	11.06 (281)	7.24 (184)	6.3 (160)	6.3 (160)	0.24 (6)	13.9 (6.3)
		DM1-32048...	48.3	62.1	7.68 (195)	11.81 (300)	11.06 (281)	7.24 (184)	6.3 (160)	6.3 (160)	0.24 (6)	13.9 (6.3)

Table 1. Approximate mounting dimensions in inches (mm)(Continued).

Input voltage	Frame size	Drive catalog number	Output rating		Dimensions							Weight	
			CT/IH current amps	VT/IL current amps	D in. (mm)	H1 in. (mm)	H2 in. (mm)	W1 in. (mm)	W2 in. (mm)	W3 in. (mm)	Φ in. (mm)	Ib (kg)	
380 Vac to 480 Vac 50/60 Hz 3 phase	FR1	DM1-341D5...	1.5	2.2	7.09 (180)	5.98 (152)	5.51 (140)	2.83 (72)	2.26 (57.5)	2.26 (57.5)	0.20 (5.2)	2.6 (1.2)	
		DM1-342D2...	2.2	4.3	7.09 (180)	5.98 (152)	5.51 (140)	2.83 (72)	2.26 (57.5)	2.26 (57.5)	0.20 (5.2)	2.6 (1.2)	
		DM1-344D3...	4.3	5.6	7.09 (180)	5.98 (152)	5.51 (140)	2.83 (72)	2.26 (57.5)	2.26 (57.5)	0.20 (5.2)	2.6 (1.2)	
		DM1-345D6...	5.6	7.6	7.09 (180)	5.98 (152)	5.51 (140)	2.83 (72)	2.26 (57.5)	2.26 (57.5)	0.20 (5.2)	2.6 (1.2)	
	FR2	DM1-347D6...	7.6	12	7.09 (180)	8.66 (220)	8.15 (207)	4.29 (109)	3.56 (90.5)	3.56 (90.5)	0.22 (5.5)	5.7 (2.6)	
		DM1-34012...	12	16	7.09 (180)	8.66 (220)	8.15 (207)	4.29 (109)	3.56 (90.5)	3.56 (90.5)	0.22 (5.5)	5.7 (2.6)	
		DM1-34016...	16	23	7.09 (180)	8.66 (220)	8.15 (207)	4.29 (109)	3.56 (90.5)	3.56 (90.5)	0.22 (5.5)	5.7 (2.6)	
	FR3	DM1-34023...	23	31	7.09 (180)	10.24 (260)	9.72 (247)	5.12 (130)	4.57 (116)	4.57 (116)	0.22 (5.5)	8.2 (3.7)	
	FR4	DM1-34031...	31	38	7.68 (195)	11.81 (300)	11.06 (281)	7.24 (184)	6.3 (160)	6.3 (160)	0.24 (6)	13.9 (6.3)	
		DM1-34038...	38	46	7.68 (195)	11.81 (300)	11.06 (281)	7.24 (184)	6.3 (160)	6.3 (160)	0.24 (6)	13.9 (6.3)	
525 Vac to 600 Vac 50/60 Hz 3 phase	FR2	DM1-351D7...	1.7	2.7	7.09 (180)	8.66 (220)	8.15 (207)	4.29 (109)	3.56 (90.5)	3.56 (90.5)	0.22 (5.5)	5.7 (2.6)	
		DM1-352D7...	2.7	4.5	7.09 (180)	8.66 (220)	8.15 (207)	4.29 (109)	3.56 (90.5)	3.56 (90.5)	0.22 (5.5)	5.7 (2.6)	
		DM1-354D5...	4.5	7.5	7.09 (180)	8.66 (220)	8.15 (207)	4.29 (109)	3.56 (90.5)	3.56 (90.5)	0.22 (5.5)	5.7 (2.6)	
		DM1-357D5...	7.5	10	7.09 (180)	8.66 (220)	8.15 (207)	4.29 (109)	3.56 (90.5)	3.56 (90.5)	0.22 (5.5)	5.7 (2.6)	
		DM1-35010...	10	13.5	7.09 (180)	8.66 (220)	8.15 (207)	4.29 (109)	3.56 (90.5)	3.56 (90.5)	0.22 (5.5)	5.7 (2.6)	
	FR3	DM1-35013...	13.5	18	7.09 (180)	10.24 (260)	9.72 (247)	5.12 (130)	4.57 (116)	4.57 (116)	0.22 (5.5)	8.2 (3.7)	
	FR4	DM1-35018...	18	22	7.68 (195)	11.81 (300)	11.06 (281)	7.24 (184)	6.3 (160)	6.3 (160)	0.24 (6)	13.9 (6.3)	
		DM1-35022...	22	27	7.68 (195)	11.81 (300)	11.06 (281)	7.24 (184)	6.3 (160)	6.3 (160)	0.24 (6)	13.9 (6.3)	

en Mounting	it Montaggio	da Montering	fi Asennus	lv Montāža	sk Montáž	tr Montaj
de Montage	zh 安装	el Τοποθέτηση	cs Montáž	lt Montavimas	bg Монтаж	uk Монтаж
fr Montage	ru Монтаж	pt Montagem	et Paigaldamine	pl Montaż	ro Montarea	ar التركيب
es Montaje	nl Montering	sv Montering	hu Felszerelés	sl Montaža	hr Montaža	

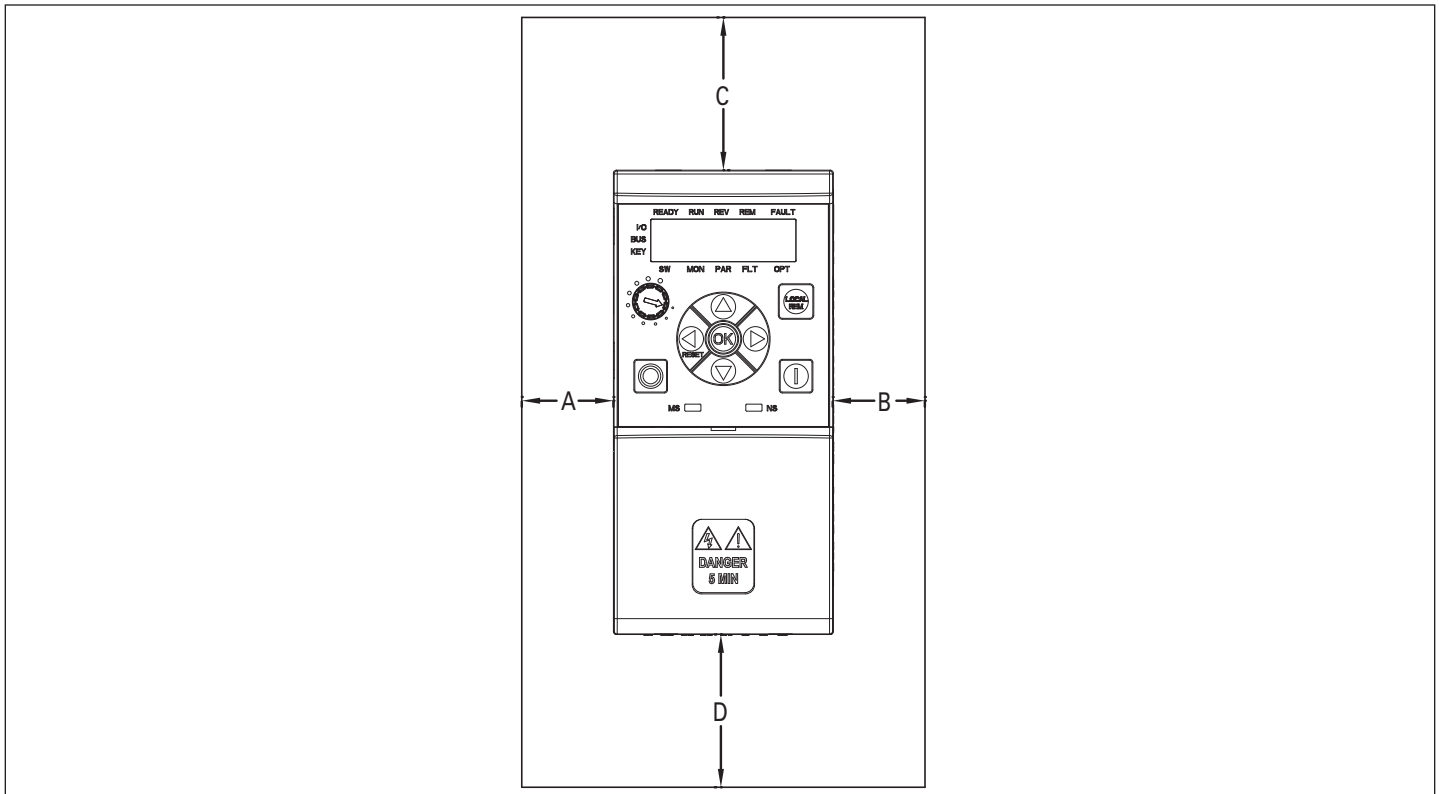


Table 2. Approximate space requirements in inches (mm).

Input voltage	Frame size	Drive catalog number	Output rating		Mounting clearance imperial				Airflow CFM (m3/h)
			CT/IH current amps	VT/IL current amps	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	
100 Vac to 120 Vac, 50/60 Hz 1 phase	FR1	DM1-111D6...	1.6	2.5	0	0	1.97 (50)	1.97 (50)	14.83 (25.2)
		DM1-113D0...	3	4.8	0	0	1.97 (50)	1.97 (50)	14.83 (25.2)
	FR2	DM1-114D8...	4.8	6.9	0	0	1.97 (50)	1.97 (50)	24.72 (42)
		DM1-116D9...	6.9	7.8	0	0	1.97 (50)	1.97 (50)	24.72 (42)
200 Vac to 240 Vac, 50/60 Hz 1 phase	FR1	DM1-121D6...	1.6	2.5	0	0	1.97 (50)	1.97 (50)	14.83 (25.2)
		DM1-123D0...	3	4.8	0	0	1.97 (50)	1.97 (50)	14.83 (25.2)
		DM1-124D8...	4.8	7.8	0	0	1.97 (50)	1.97 (50)	14.83 (25.2)
	FR2	DM1-127D8...	7.8	11	0	0	1.97 (50)	1.97 (50)	24.72 (42)
		DM1-12011...	11	17.5	0	0	1.97 (50)	1.97 (50)	24.72 (42)
	FR3	DM1-12017...	17.5	25.3	0	0	1.97 (50)	1.97 (50)	42.37 (72)
200 Vac to 240 Vac, 50/60 Hz 3 phase	FR1	DM1-321D6...	1.6	2.5	0	0	1.97 (50)	1.97 (50)	14.83 (25.2)
		DM1-323D0...	3	4.8	0	0	1.97 (50)	1.97 (50)	14.83 (25.2)
		DM1-324D8...	4.8	7.8	0	0	1.97 (50)	1.97 (50)	14.83 (25.2)
		DM1-327D8...	7.8	11	0	0	1.97 (50)	1.97 (50)	14.83 (25.2)
	FR2	DM1-32011...	11	17.5	0	0	1.97 (50)	1.97 (50)	24.72 (42)
		DM1-32017...	17.5	25.3	0	0	1.97 (50)	1.97 (50)	24.72 (42)
	FR3	DM1-32025...	25.3	32.2	0	0	1.97 (50)	1.97 (50)	42.37 (72)
	FR4	DM1-32032...	32.2	48.3	0	0	1.97 (50)	1.97 (50)	75.56 (128.4)
		DM1-32048...	48.3	62.1	0	0	1.97 (50)	1.97 (50)	75.56 (128.4)

Note: For DM1 drives with an option card, allow 2.76 in. or 70 mm for dimension A for the option card enclosure.

Table 2. Approximate space requirements in inches (mm) (Continued).

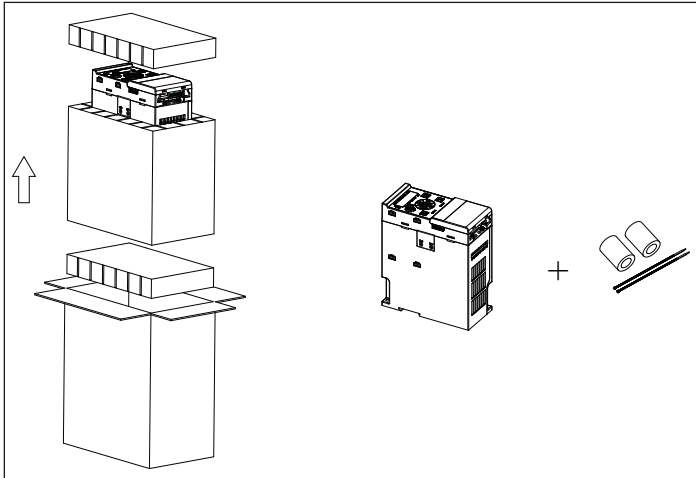
Input voltage	Frame size	Drive catalog number	Output rating		Mounting clearance imperial				Airflow
			CT/IH current amps	VT/IL current amps	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	CFM (m3/h)
380 Vac to 480 Vac, 50/60 Hz 3 phase	FR1	DM1-341D5...	1.5	2.2	0	0	1.97 (50)	1.97 (50)	14.83 (25.2)
		DM1-342D2...	2.2	4.3	0	0	1.97 (50)	1.97 (50)	14.83 (25.2)
		DM1-344D3...	4.3	5.6	0	0	1.97 (50)	1.97 (50)	14.83 (25.2)
		DM1-345D6...	5.6	7.6	0	0	1.97 (50)	1.97 (50)	14.83 (25.2)
	FR2	DM1-347D6...	7.6	12	0	0	1.97 (50)	1.97 (50)	37.43 (63.6)
		DM1-34012...	12	16	0	0	1.97 (50)	1.97 (50)	37.43 (63.6)
		DM1-34016...	16	23	0	0	1.97 (50)	1.97 (50)	37.43 (63.6)
	FR3	DM1-34023...	23	31	0	0	1.97 (50)	1.97 (50)	58.61 (99.6)
	FR4	DM1-34031...	31	38	0	0	1.97 (50)	1.97 (50)	57.56 (97.8)
		DM1-34038...	38	46	0	0	1.97 (50)	1.97 (50)	57.56 (97.8)
525 Vac to 600 Vac, 50/60 Hz 3 phase	FR2	DM1-351D7...	1.7	2.7	0	0	1.97 (50)	1.97 (50)	37.43 (63.6)
		DM1-352D7...	2.7	4.5	0	0	1.97 (50)	1.97 (50)	37.43 (63.6)
		DM1-354D5...	4.5	7.5	0	0	1.97 (50)	1.97 (50)	37.43 (63.6)
		DM1-357D5...	7.5	10	0	0	1.97 (50)	1.97 (50)	37.43 (63.6)
		DM1-35010...	10	13.5	0	0	1.97 (50)	1.97 (50)	37.43 (63.6)
	FR3	DM1-35013...	13.5	18	0	0	1.97 (50)	1.97 (50)	58.61 (99.6)
	FR4	DM1-35018...	18	22	0	0	1.97 (50)	1.97 (50)	57.56 (97.8)
		DM1-35022...	22	27	0	0	1.97 (50)	1.97 (50)	57.56 (97.8)

Note: For DM1 drives with an option card, allow 2.76 in. or 70 mm for dimension A for the option card enclosure.

FR1 mounting instructions

Step 1.

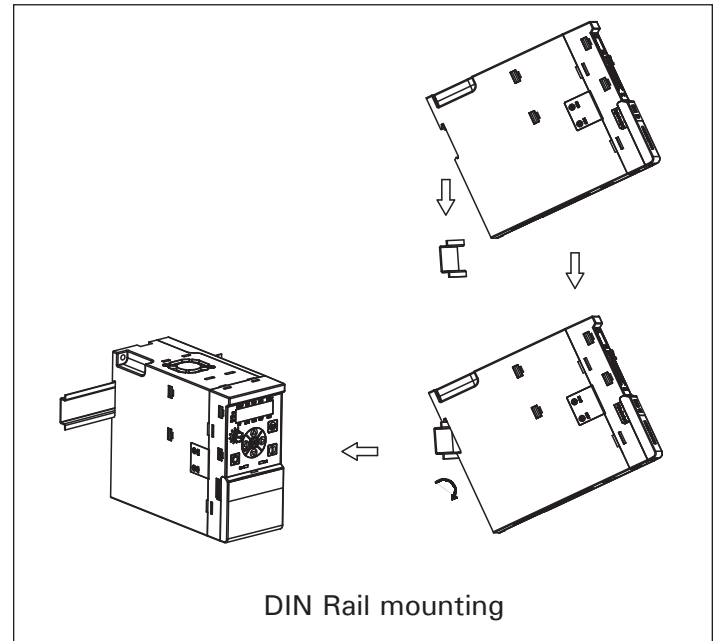
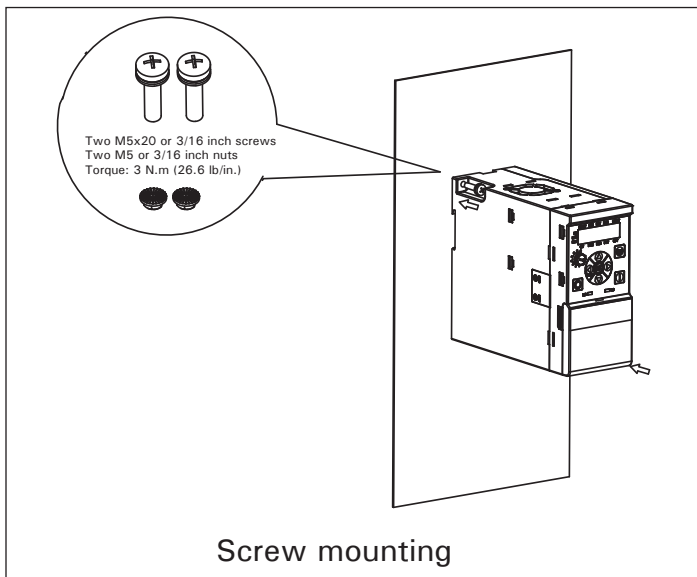
Lift the drive out from the carton and remove the packaging. The magnetic cores and cable ties are only included in EMI version drive.



Step 2.

Screw mounting: Attach the drive to the mounting plate with two M5x20 (or 3/16 in.) screws and two M5 (or 3/16 in.) nuts. The opening dimension on the mounting plate should follow required dimension (refer to the dimension drawing in Table 1 of this document).

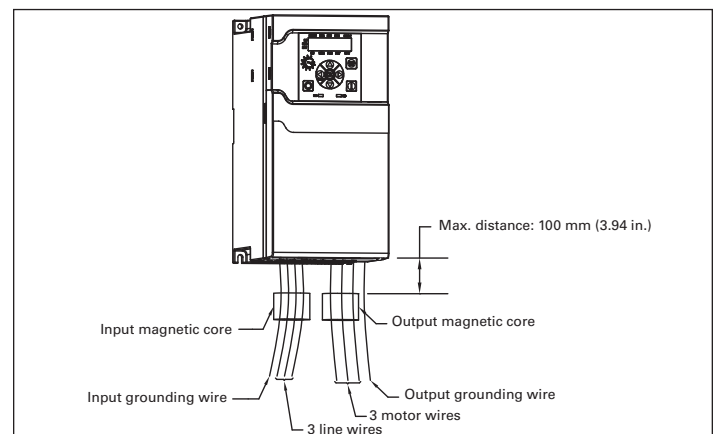
DIN Rail mounting: Lift the drive at an angle about 30 degrees. Align the top hooks of drive DIN rail mounting slot with DIN rail top edge. Push down and rotate the drive to clip the bottom hooks on the bottom DIN rail edge.



Step 3. (EMI version only):

The input wires (including 3 line wires and 1 input grounding wire) should run through the input magnetic core before connecting to input terminal block and grounding hole. Use a cable tie to tie the input magnetic cores to the input wires. The output wires (only 3 motor wires) should run through the output magnetic core before connecting to output terminal block.

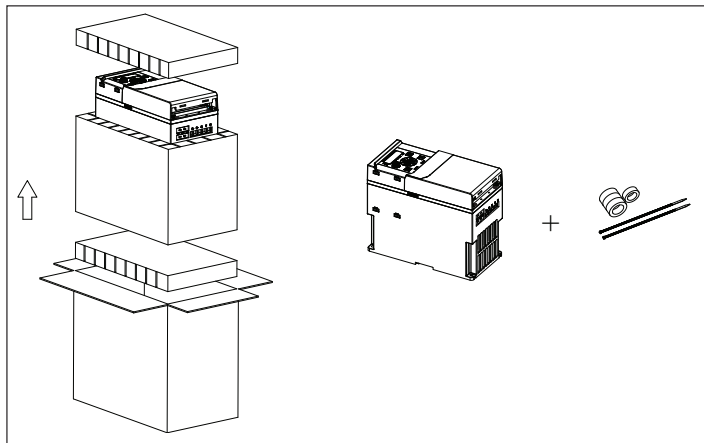
The output grounding wire should not run through the output magnetic core. Use a cable tie to tie the output magnetic cores to the output wires. The maximum distance between input / output magnetic cores top surface and drive bottom surface is 100 mm (3.94 in.). The input magnetic core and output magnetic core are the same for FR1.



FR2 mounting instructions

Step 1.

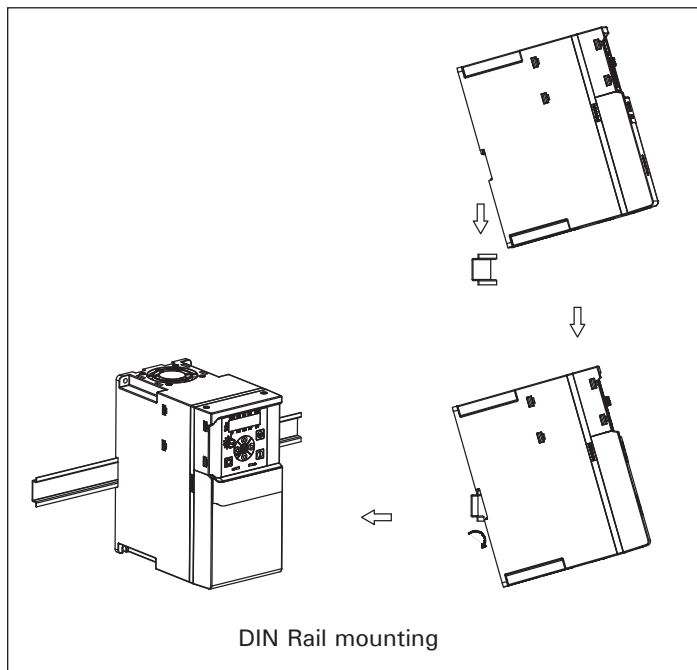
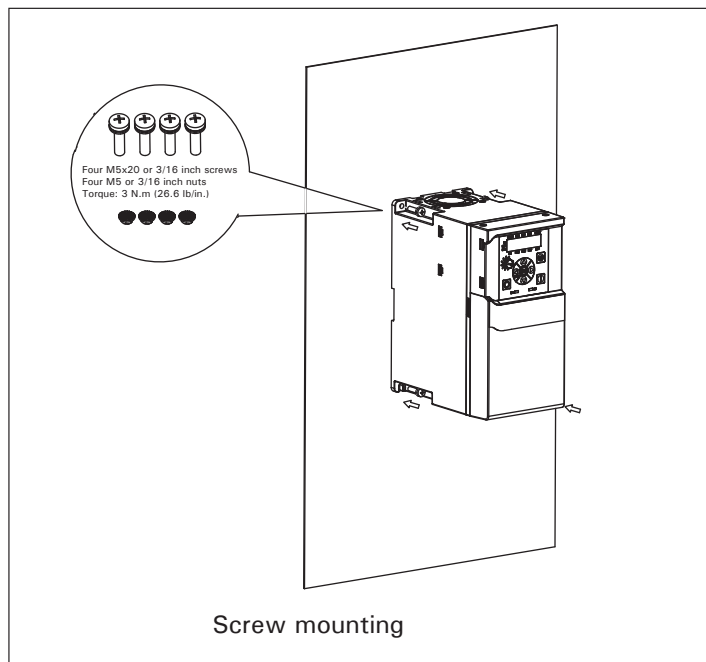
Lift the drive out from the carton, remove the packaging. The magnetic cores and cable ties are only included in EMI version drive.



Step 2.

Screw mounting: Attach the drive to the mounting plate with four M5X20 (or 3/16 in.) screws and four M5 (or 3/16 in.) nuts. The opening dimension on the mounting plate should follow required dimension (refer to the dimension drawing in the instruction leaflet).

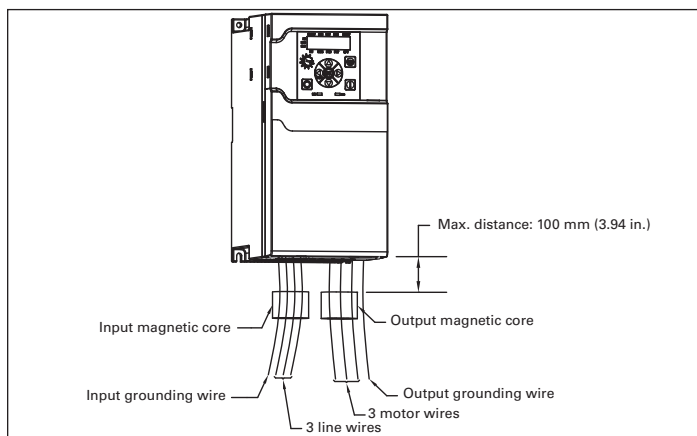
DIN Rail mounting: Lift the drive at an angle about 30 degrees. Align the top hooks of drive DIN rail mounting slot with DIN rail top edge. Push down and rotate the drive to clip the bottom hooks on the bottom DIN rail edge.



Step 3. (EMI version only):

The input wires (including 3 line wires and 1 input grounding wire) should run through the input magnetic core before connecting to input terminal block and grounding hole. Use a cable tie to tie the input magnetic cores to the input wires. The output wires (only 3 motor wires) should run through the output magnetic core before connecting to output terminal block.

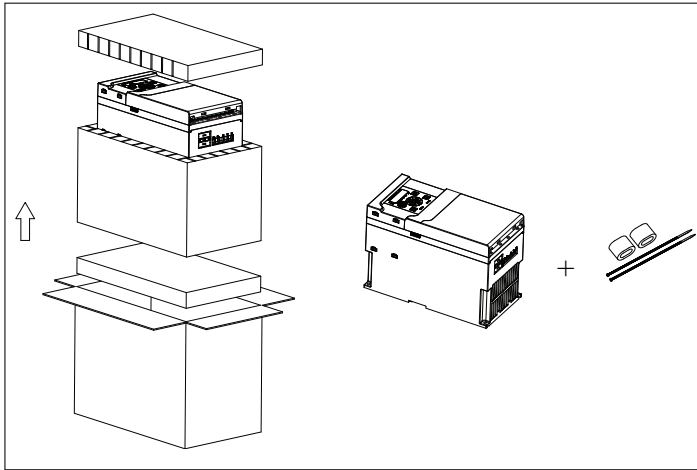
The output grounding wire should not run through the output magnetic core. Use a cable tie to tie the output magnetic cores to the output wires. The maximum distance between input / output magnetic cores top surface and drive bottom surface is 100 mm (3.94 in.). The height of input magnetic core is bigger than output magnetic core for 3 phase FR2 EMI version, but they are the same for 1 phase FR2 EMI version.



FR3 mounting instructions

Step 1.

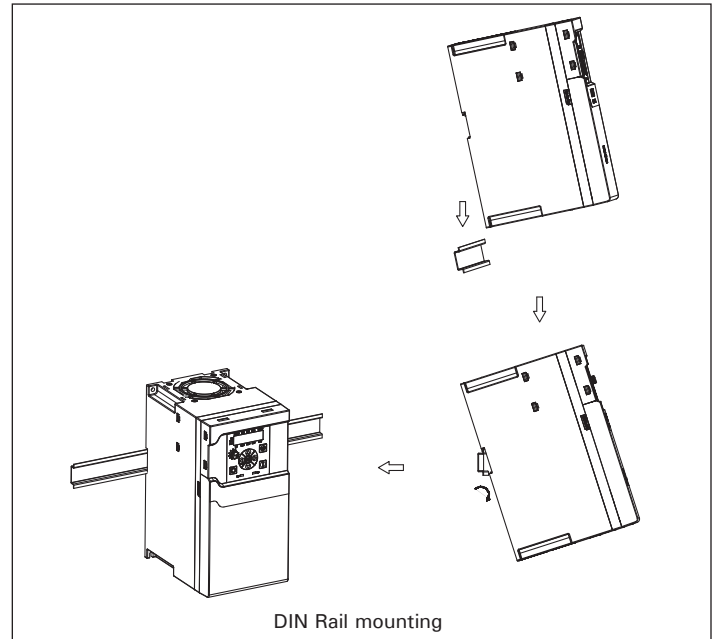
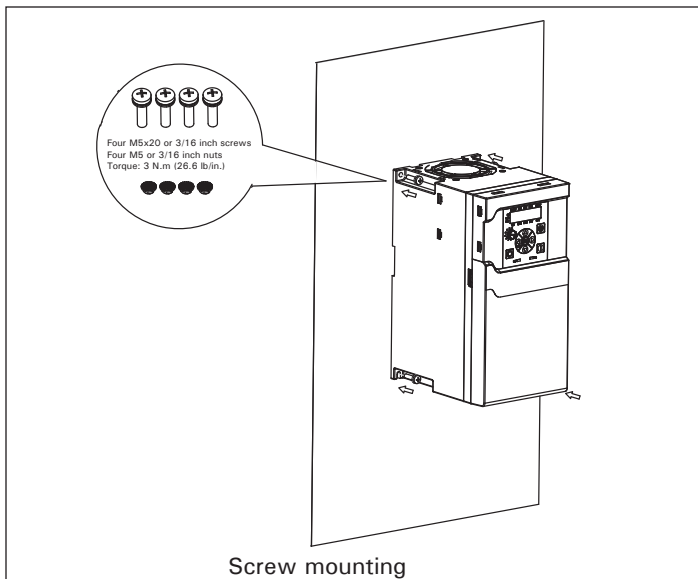
Lift the drive out from the carton, remove the packaging. The magnetic cores and cable ties are only included in EMI version drive.



Step 2.

Screw mounting: Attach the drive to the mounting plate with four M5X20 (or 3/16 in.) screws and four M5 (or 3/16 in.) nuts. The opening dimension on the mounting plate should follow required dimension (refer to the dimension drawing in the instruction leaflet).

DIN Rail mounting: Lift the drive at an angle about 30 degrees. Align the top hooks of drive DIN rail mounting slot with DIN rail top edge. Push down and rotate the drive to clip the bottom hooks on the bottom DIN rail edge.



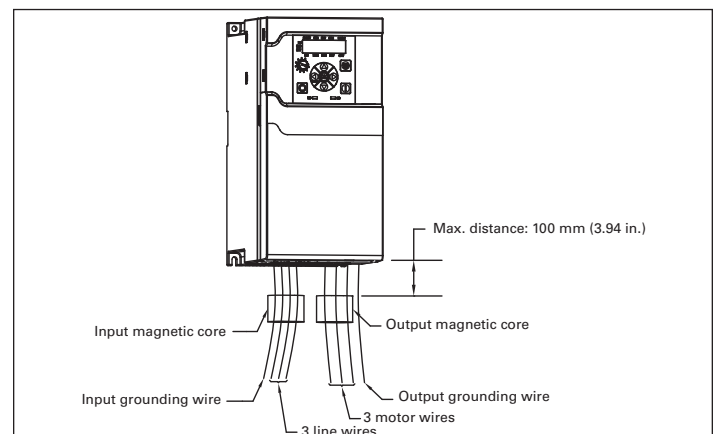
Step 3. (EMI version only):

The input wires (including three line wires and one input grounding wire) should run through the input magnetic core before connecting to input terminal block and grounding hole. Use a cable tie to tie the input magnetic cores to the input wires.

For 3-phase FR3 EMI version, the output wires (only three motor wires) should run through the output magnetic core before connecting to output terminal block. The output grounding wire should not run through the output magnetic core. Use a cable tie to tie the output magnetic cores to the output wires. For 1-phase FR3 EMI version, there is no output magnetic core. The motor wires and output grounding wire can be connected to corresponding terminals directly.

The maximum distance between input / output magnetic cores top surface and drive bottom surface is 100 mm.

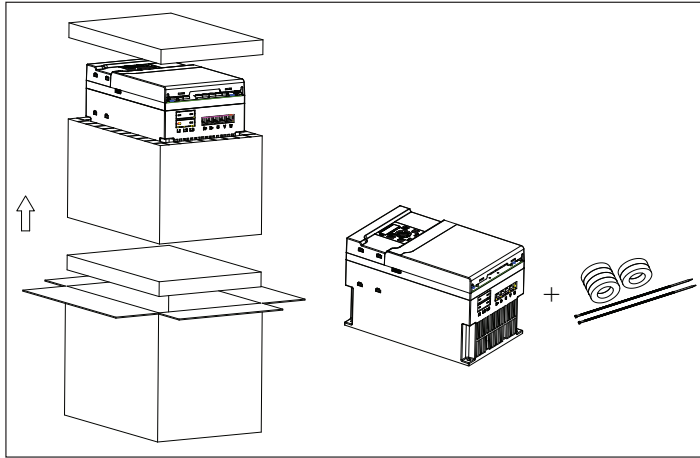
The input magnetic core and output magnetic core are the same for 3-phase FR3 EMI version.



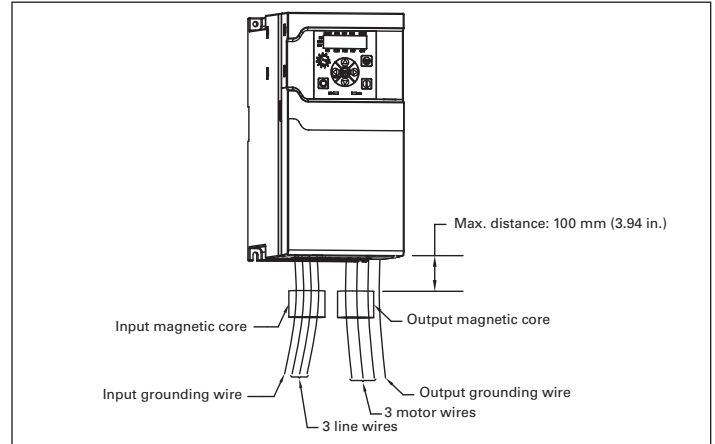
FR4 mounting instructions

Step 1.

Lift the drive out from the carton, remove the packaging. The magnetic cores and cable ties are only included in EMI version drive.

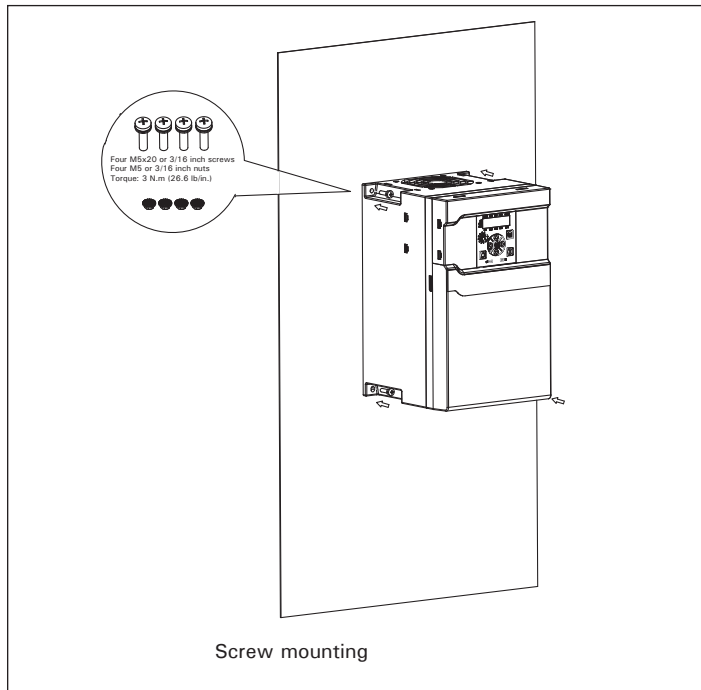


The output grounding wire should not run through the output magnetic core. Use a cable tie to tie the output magnetic cores to the output wires. The maximum distance between input / output magnetic cores top surface and drive bottom surface is 100 mm (3.94 in.). The height of input magnetic core is bigger than output magnetic core for FR4. .



Step 2.

Screw mounting: Attach the drive to the mounting plate with four M5x20 (or 3/16 in.) screws and four M5 (or 3/16 in.) nuts. The opening dimension on the mounting plate should follow required dimension (refer to the dimension drawing in the instruction leaflet).



Step 3. (EMI version only):

The input wires (including 3 line wires and 1 input grounding wire) should run through the input magnetic core before connecting to input terminal block and grounding hole. Use a cable tie to tie the input magnetic cores to the input wires. The output wires (only 3 motor wires) should run through the output magnetic core before connecting to output terminal block.

Mounting instruction for option cards

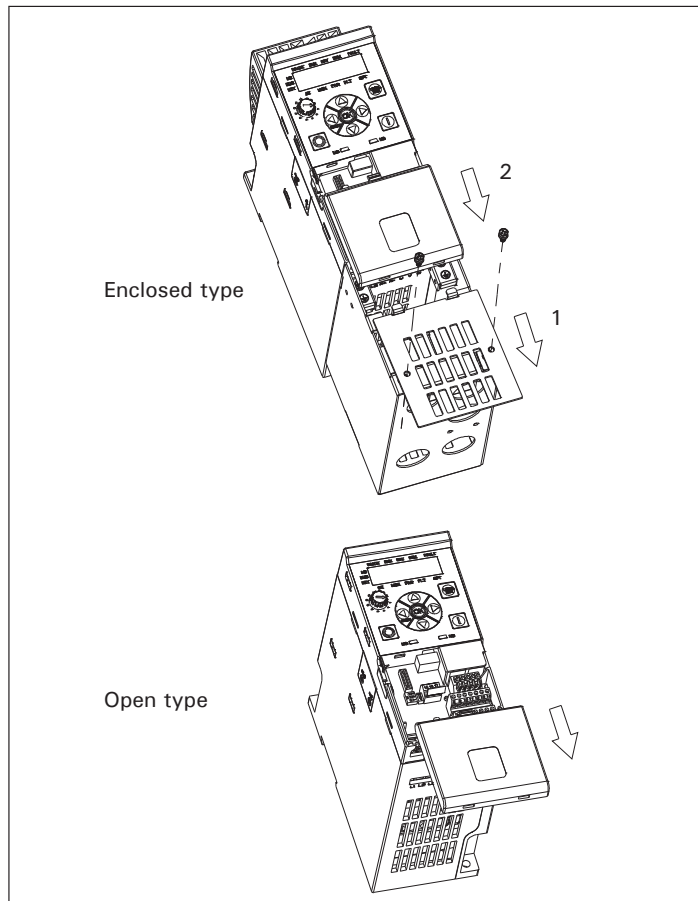
Step 1.

For enclosed type:

Remove the front cover (1) from NEMA 1 kit then remove the terminal cover (2) from drive.

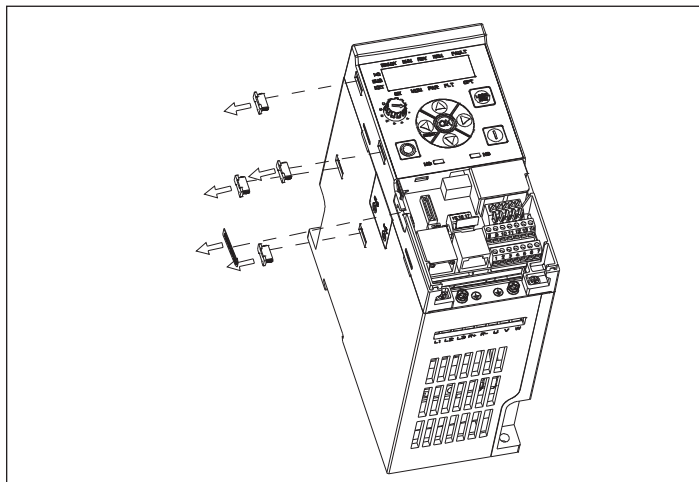
For open type:

Only remove the terminal cover.



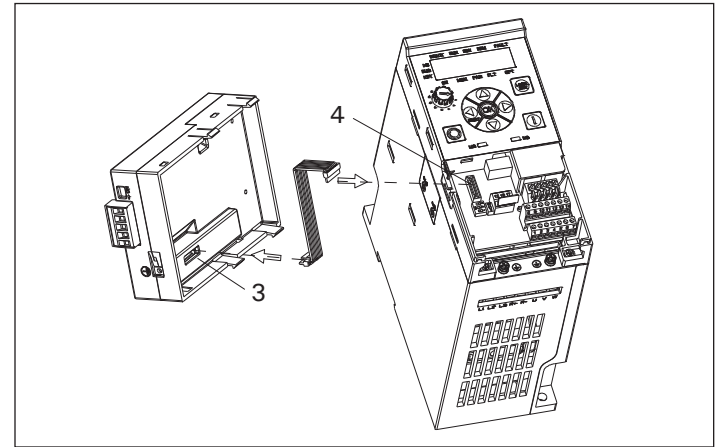
Step 2.

Remove the option card port label and four snap covers from the drive.



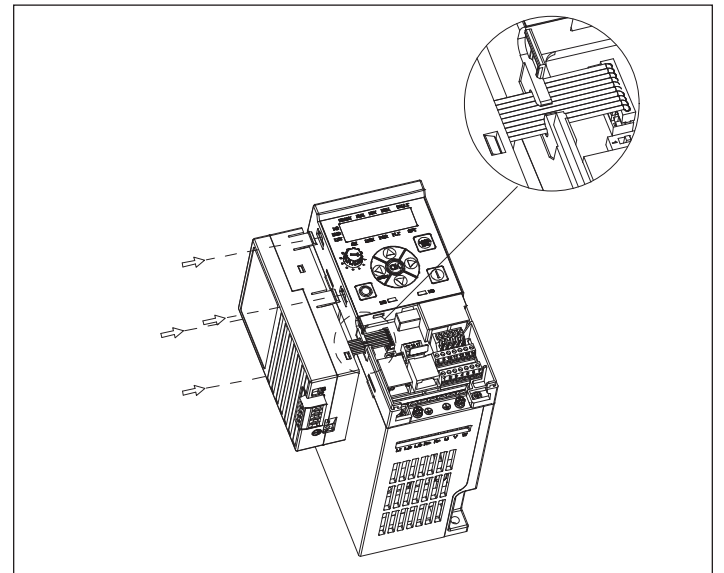
Step 3.

Connect the cable to option card connector (3) and MCU board connector (4).



Step 4.

Clamp the cable with the optional card port. Mount the option card to the drive by inserting the four snaps into the slots on drive.



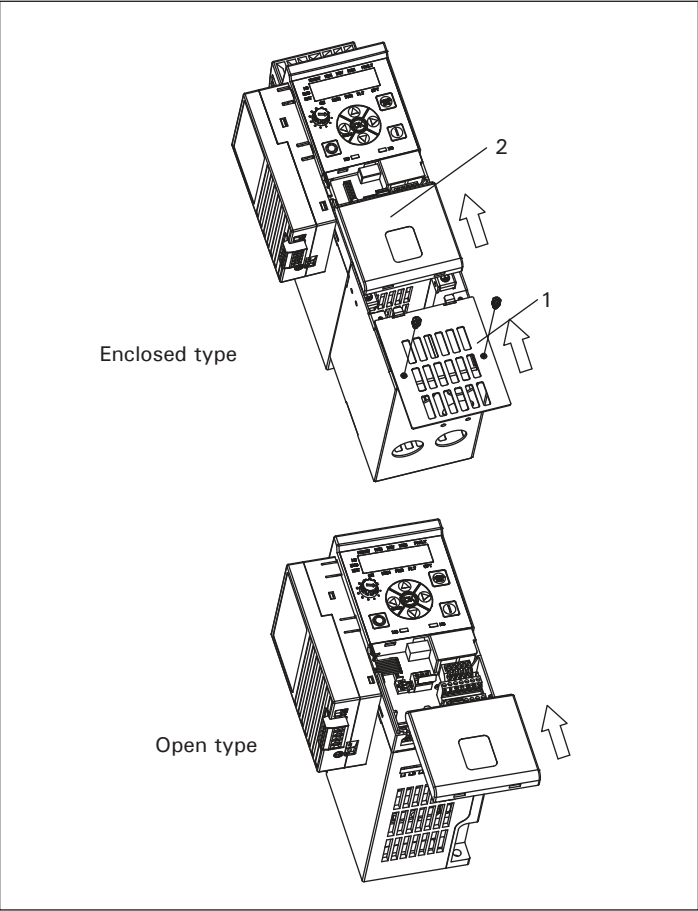
Step 5.

For enclosed type:

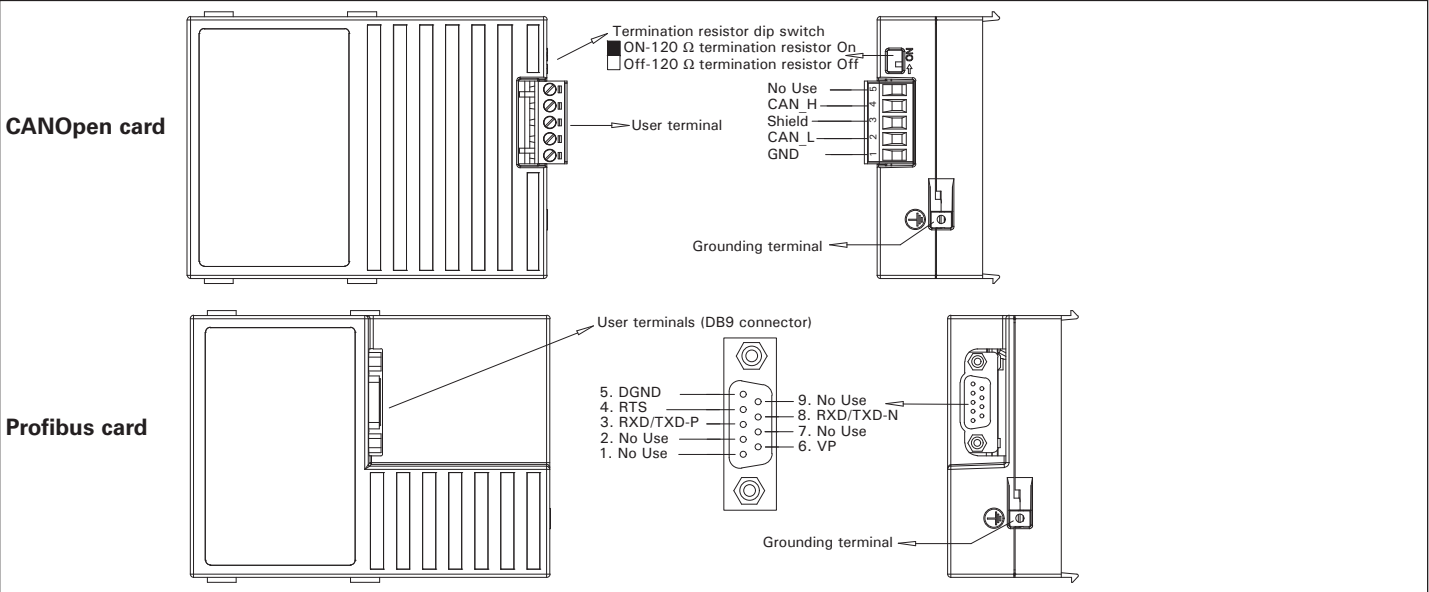
Install the terminal cover (1) to the drive then install the front cover (2) to NEMA 1 kit.

For open type:

Only install the terminal cover to the drive.

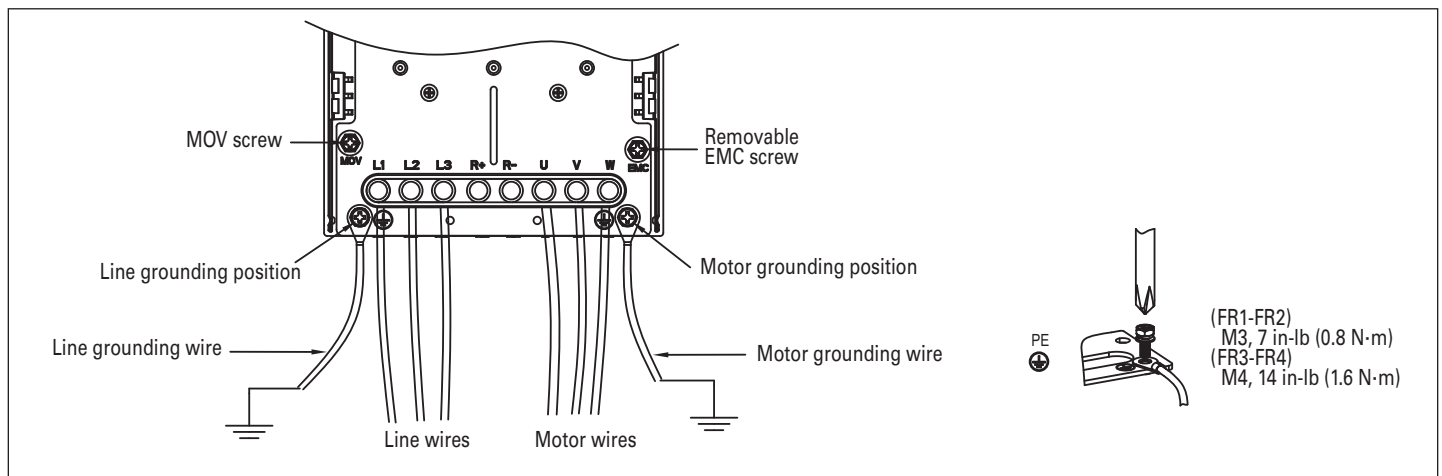


Wiring instruction.



(en) NOTICE Connect only in voltage-free state!	(el) ΕΠΑΓΓΡΥΠΝΗΣΗ Συνδέστε μόνο όταν δεν επικρατεί τάση!	(pl) UWAGA Podłączać zawsze po uprzednim odłączeniu od zasilania elektrycznego!
(de) ACHTUNG Nur im spannungsfreien Zustand anschließen!	(pt) ADVERTÊNCIA Ligar apenas com a tensão desligada!	(sl) POZOR Napravo priključite le, ko ni pod napetostjo!
(fr) ATTENTION Raccordez l'appareil uniquement hors tension !	(sv) OBSERVERA Får endast anslutas i spänningsfritt tillstånd!	(sk) UPOZORNENIE Napájat' len v stave bez napätia!
(es) CUIDADO ¡Conectar únicamente en estado sin tensión!	(fi) ILMOITUS Kytke vain jännitteettömässä tilassa!	(bg) ПРЕДУПРЕЖДЕНИЕ Свързвайте само, когато уреда не е под напрежение!
(it) AVVISO Collegare solo in assenza di tensione!	(cs) UPOZORNĚNÍ Připojujte jen při zcela odpojeném napájení!	(ro) ATENȚIE Conectați doar când aparatul nu se află sub tensiune!
(zh) 注意 必须在断电状态下进行连接！	(et) TÄHELEPANU Ühendada ainult pingevabas olekus!	(hr) POZOR Priključujte samo u beznaponskom stanju!
(ru) ВНИМАНИЕ Подключать только в обесточенном состоянии!	(hu) FIGYELEM Csak feszültségmentes állapotban csatlakoztassa!	(tr) BİLDİRİM Sadece gerilim sıfırken bağlayın!
(nl) OPGELET Alleen in spanningsloze toestand aansluiten!	(lv) UZMANĪBU Pieslēgt tikai tad, kad nenotiek sprieguma padeve!	(uk) ПОВІДОМЛЕННЯ Підключати лише за відсутності напруги!
(da) VIGTIGT Må kun tilsluttes i spændingsfri tilstand!	(lt) DĖMESIO Prijungti tik tada, kai išjungta įtampa!	(ar) ملاحظة التوصيل فقط في حال عدم الفولتية!

Ground wiring



Input power and motor cable stripping lengths

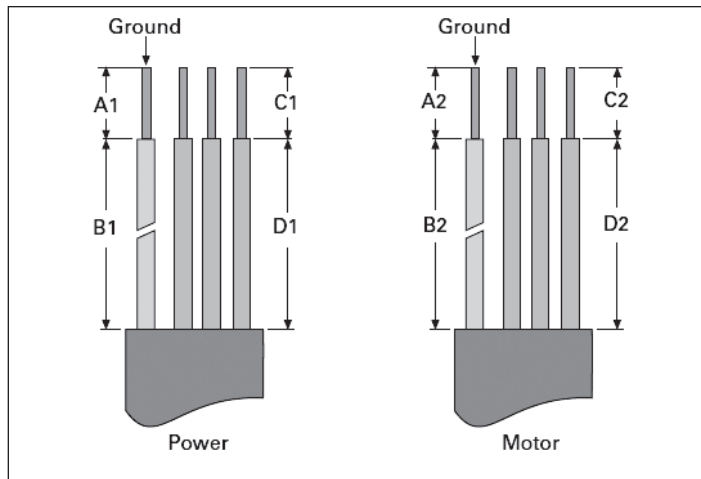


Table 3. Stripping lengths.

Frame size	Power wiring				Motor wiring			
	A1 in. (mm)	B1 in. (mm)	C1 in. (mm)	D1 in. (mm)	A2 in. (mm)	B2 in. (mm)	C2 in. (mm)	D2 in. (mm)
FR1	0.39 (10)	2.76 (70)	0.39 (10)	2.76 (70)	0.39 (10)	2.76 (70)	0.39 (10)	2.76 (70)
FR2	0.47 (12)	2.76 (70)	0.47 (12)	2.76 (70)	0.47 (12)	2.76 (70)	0.47 (12)	2.76 (70)
FR3	0.47 (12)	3.54 (90)	0.47 (12)	3.54 (90)	0.47 (12)	3.54 (90)	0.47 (12)	3.54 (90)
FR4	0.79 (20)	4.53 (115)	0.79 (20)	4.53 (115)	0.79 (20)	4.53 (115)	0.79 (20)	4.53 (115)

Note: For I/O / STO / Relay output wires, the stripping length = 0.236-0.276 in. (6-7 mm).

Table 4. Connection sizes and torques.①②

Input voltage	Frame size	Drive catalog number	Output rating		Size and torque						
			CT/IH current amps	VT/IL current amps	Power wire size AWG (mm2)	Power wire torque in.-lb (N-m)	Ground wire size AWG (mm2)	Ground wire torque in.-lb (N-m)	Control wire size AWG (mm2)	Control wire torque in.-lb (N-m) AI/DI ③	RO
100 Vac to 120 Vac 50/60 Hz 1 phase	FR1	DM1-111D6...	1.6	2.5	14 (2.5)	4.4 (0.5)	14 (2.5)	7.1 (0.8)	28-16 (0.5-1.5)	1.73 (0.2)	4.5 (0.5)
		DM1-113D0...	3	4.8	14 (2.5)	4.4 (0.5)	14 (2.5)	7.1 (0.8)	28-16 (0.5-1.5)	1.73 (0.2)	4.5 (0.5)
	FR2	DM1-114D8...	4.8	6.9	10 (6)	10.5 (1.2)	10 (6)	7.1 (0.8)	28-16 (0.5-1.5)	1.73 (0.2)	4.5 (0.5)
		DM1-116D9...	6.9	7.8	10 (6)	10.5 (1.2)	10 (6)	7.1 (0.8)	28-16 (0.5-1.5)	1.73 (0.2)	4.5 (0.5)
200 Vac to 240 Vac 50/60 Hz 1 phase	FR1	DM1-121D6...	1.6	2.5	14 (2.5)	4.4 (0.5)	14 (2.5)	7.1 (0.8)	28-16 (0.5-1.5)	1.73 (0.2)	4.5 (0.5)
		DM1-123D0...	3	4.8	14 (2.5)	4.4 (0.5)	14 (2.5)	7.1 (0.8)	28-16 (0.5-1.5)	1.73 (0.2)	4.5 (0.5)
		DM1-124D8...	4.8	7.8	14 (2.5)	4.4 (0.5)	14 (2.5)	7.1 (0.8)	28-16 (0.5-1.5)	1.73 (0.2)	4.5 (0.5)
	FR2	DM1-127D8...	7.8	11	10 (6)	10.5 (1.2)	10 (6)	7.1 (0.8)	28-16 (0.5-1.5)	1.73 (0.2)	4.5 (0.5)
		DM1-12011...	11	17.5	10 (6)	10.5 (1.2)	10 (6)	7.1 (0.8)	28-16 (0.5-1.5)	1.73 (0.2)	4.5 (0.5)
	FR3	DM1-12017...	17.5	25.3	8 (10)	10.5 (1.2)	8 (10)	14.2 (1.6)	28-16 (0.5-1.5)	1.73 (0.2)	4.5 (0.5)
200 Vac to 240 Vac 50/60 Hz 3 phase	FR1	DM1-321D6...	1.6	2.5	14 (2.5)	4.4 (0.5)	14 (2.5)	7.1 (0.8)	28-16 (0.5-1.5)	1.73 (0.2)	4.5 (0.5)
		DM1-323D0...	3	4.8	14 (2.5)	4.4 (0.5)	14 (2.5)	7.1 (0.8)	28-16 (0.5-1.5)	1.73 (0.2)	4.5 (0.5)
		DM1-324D8...	4.8	7.8	14 (2.5)	4.4 (0.5)	12 (2.5)	7.1 (0.8)	28-16 (0.5-1.5)	1.73 (0.2)	4.5 (0.5)
		DM1-327D8...	7.8	11	12 (4)	4.4 (0.5)	10 (4)	7.1 (0.8)	28-16 (0.5-1.5)	1.73 (0.2)	4.5 (0.5)
	FR2	DM1-32011...	11	17.5	10 (6)	10.5 (1.2)	10 (6)	7.1 (0.8)	28-16 (0.5-1.5)	1.73 (0.2)	4.5 (0.5)
		DM1-32017...	17.5	25.3	8 (10)	10.5 (1.2)	10 (10)	7.1 (0.8)	28-16 (0.5-1.5)	1.73 (0.2)	4.5 (0.5)
	FR3	DM1-32025...	25.3	32.2	8 (10)	10.5 (1.2)	8 (10)	14.2 (1.6)	28-16 (0.5-1.5)	1.73 (0.2)	4.5 (0.5)
	FR4	DM1-32032...	32.2	48.3	4 (25)	33 (3.73)	8 (16)	14.2 (1.6)	28-16 (0.5-1.5)	1.73 (0.2)	4.5 (0.5)
		DM1-32048...	48.3	62.1	3 (35)	33 (3.73)	6 (16)	14.2 (1.6)	28-16 (0.5-1.5)	1.73 (0.2)	4.5 (0.5)

Table 4. Connection sizes and torques(Continued).①②

Input voltage	Frame size	Drive catalog number	Output rating		Size and torque						RO
			CT/IH current amps	VT/IL current amps	Power wire size AWG (mm2)	Power wire torque in.-lb (N-m)	Ground wire size AWG (mm2)	Ground wire torque in.-lb (N-m)	Control wire size AWG (mm2)	Control wire torque in.-lb (N-m) AI/DI ③	
380 Vac to 480 Vac 50/60 Hz 3 phase	FR1	DM1-341D5...	1.5	2.2	14 (2.5)	4.4 (0.5)	14 (2.5)	7.1 (0.8)	28-16 (0.5-1.5)	1.73 (0.2)	4.5 (0.5)
		DM1-342D2...	2.2	4.3	14 (2.5)	4.4 (0.5)	14 (2.5)	7.1 (0.8)	28-16 (0.5-1.5)	1.73 (0.2)	4.5 (0.5)
		DM1-344D3...	4.3	5.6	14 (2.5)	4.4 (0.5)	14 (2.5)	7.1 (0.8)	28-16 (0.5-1.5)	1.73 (0.2)	4.5 (0.5)
		DM1-345D6...	5.6	7.6	14 (2.5)	4.4 (0.5)	10 (2.5)	7.1 (0.8)	28-16 (0.5-1.5)	1.73 (0.2)	4.5 (0.5)
	FR2	DM1-347D6...	7.6	12	12 (4)	10.5 (1.2)	10 (4)	7.1 (0.8)	28-16 (0.5-1.5)	1.73 (0.2)	4.5 (0.5)
		DM1-34012...	12	16	10 (6)	10.5 (1.2)	10 (6)	7.1 (0.8)	28-16 (0.5-1.5)	1.73 (0.2)	4.5 (0.5)
		DM1-34016...	16	23	8 (10)	10.5 (1.2)	10 (10)	7.1 (0.8)	28-16 (0.5-1.5)	1.73 (0.2)	4.5 (0.5)
	FR3	DM1-34023...	23	31	8 (10)	10.5 (1.2)	8 (10)	14.2 (1.6)	28-16 (0.5-1.5)	1.73 (0.2)	4.5 (0.5)
	FR4	DM1-34031...	31	38	6 (16)	33 (3.73)	8 (16)	14.2 (1.6)	28-16 (0.5-1.5)	1.73 (0.2)	4.5 (0.5)
		DM1-34038...	38	46	4 (25)	33 (3.73)	8 (16)	14.2 (1.6)	28-16 (0.5-1.5)	1.73 (0.2)	4.5 (0.5)
525 Vac to 600 Vac 50/60 Hz 3 phase	FR2	DM1-351D7...	1.7	2.7	12 (4)	10.5 (1.2)	10 (4)	7.1 (0.8)	28-16 (0.5-1.5)	1.73 (0.2)	4.5 (0.5)
		DM1-352D7...	2.7	4.5	12 (4)	10.5 (1.2)	10 (4)	7.1 (0.8)	28-16 (0.5-1.5)	1.73 (0.2)	4.5 (0.5)
		DM1-354D5...	4.5	7.5	12 (4)	10.5 (1.2)	10 (4)	7.1 (0.8)	28-16 (0.5-1.5)	1.73 (0.2)	4.5 (0.5)
		DM1-357D5...	7.5	10	12 (4)	10.5 (1.2)	10 (4)	7.1 (0.8)	28-16 (0.5-1.5)	1.73 (0.2)	4.5 (0.5)
		DM1-35010...	10	13.5	12 (4)	10.5 (1.2)	10 (4)	7.1 (0.8)	28-16 (0.5-1.5)	1.73 (0.2)	4.5 (0.5)
	FR3	DM1-35013...	13.5	18	8 (10)	10.5 (1.2)	8 (10)	14.2 (1.6)	28-16 (0.5-1.5)	1.73 (0.2)	4.5 (0.5)
	FR4	DM1-35018...	18	22	6 (16)	33 (3.73)	8 (16)	14.2 (1.6)	28-16 (0.5-1.5)	1.73 (0.2)	4.5 (0.5)
		DM1-35022...	22	27	4 (25)	33 (3.73)	8 (16)	14.2 (1.6)	28-16 (0.5-1.5)	1.73 (0.2)	4.5 (0.5)

Notes:

① Strip the motor and power cables as shown above.

② Both UL® and IEC tools may be used.

③ Applies to strained wire, solid wire, or ferrule installations.

Cable and fuse guidelines

Table 5. North America cable and fuse sizes. ①②

UL cable and fuse sizes

Input voltage	Frame size	Drive catalog number	Output rating		Input rating		UL application									
			CT/IH current amps	V/I/L current amps	CT/IH current amps	V/I/L current amps	Recommended fuse rating (Class J, T, CF or CC) 100 kAIC①	Maximum allowed fuse rating (Class J, T, CF or CC) 100 kAIC①	Recommended inverse-time molded-case circuit breaker rating 100 kAIC (open type only for 3 phase)①	Maximum allowed inverse-time molded-case circuit breaker rating 100 kAIC (open type only for 3 phase)①	Maximum allowed miniature circuit breaker rating 10/14 kAIC①	Recommended Type E CMC rating 65 kAIC②	NEC wire size line and motor AWG	NEC wire size ground AWG	Terminal size line and motor AWG	Terminal size ground AWG
100 Vac to 120 Vac 50/60 Hz 1 phase	FR1	DM1-111D6...	1.6	2.5	6.4	9.6	15	30	15	30	30	\	14	10	18-8	16-8
		DM1-113D0...	3	4.8	12	20	30	70	30	70	63	\	10	8	18-8	16-8
	FR2	DM1-114D8...	4.8	6.9	20	29	40	90	40	90	63	\	8	8	20-6	12-6
		DM1-116D9...	6.9	7.8	29	34.3	45	125	45	125	63	\	8	6	20-6	12-6
200 Vac to 240 Vac 50/60 Hz 1 phase	FR1	DM1-121D6...	1.6	2.5	3.2	5	10	15	15	15	15	\	14	14	18-8	16-8
		DM1-123D0...	3	4.8	6	9.6	20	30	20	30	30	\	14	10	18-8	16-8
		DM1-124D8...	4.8	7.8	10	16	30	60	30	60	63	\	10	8	18-8	16-8
	FR2	DM1-127D8...	7.8	11	16	23	35	80	35	80	63	\	10	8	20-6	12-6
		DM1-12011...	11	17.5	23	35	60	125	60	125	63	\	8	6	20-6	12-6
	FR3	DM1-12017...	17.5	25.3	39.6	49.6	80	200	80	200	\	\	6	6	20-6	8-6
200 Vac to 240 Vac 50/60 Hz 3 phase	FR1	DM1-321D6...	1.6	2.5	2.1	3.3	6	6	15	15	5	6.3	14	14	18-8	16-10
		DM1-323D0...	3	4.8	3.9	5.8	10	15	15	15	10	6.3	14	14	18-8	16-10
		DM1-324D8...	4.8	7.8	5.8	9.4	15	20	15	15	15	10	14	12	18-8	16-10
		DM1-327D8...	7.8	11	9.4	13.2	20	30	20	20	20	16	12	10	18-8	16-10
	FR2	DM1-32011...	11	17.5	12.7	20.1	35	40	30	30	30	25	10	10	20-6	12-8
		DM1-32017...	17.5	25.3	20.1	29.1	45	60	45	45	40	32	8	10	20-6	12-8
	FR3	DM1-32025...	25.3	32.2	29.1	37	60	70	50	50	50	40	8	8	20-6	10-8
	FR4	DM1-32032...	32.2	48.3	35.4	53.1	80	100	80	80	\	\	4	8	20-2	8-6
DM1-32048...		48.3	62.1	53.1	68.3	110	125	100	100	\	\	3	6	20-2	8-6	
380 Vac to 480 Vac 50/60 Hz 3 phase	FR1	DM1-341D5...	1.5	2.2	1.8	2.6	6	6	15	15	4	6.3	14	14	18-8	16-10
		DM1-342D2...	2.2	4.3	2.6	5.2	10	10	15	15	8	6.3	14	14	18-8	16-10
		DM1-344D3...	4.3	5.6	5.2	6.7	15	15	15	15	10	10	14	14	18-8	16-10
		DM1-345D6...	5.6	7.6	6.7	9.1	15	30	15	15	15	10	14	10	18-8	16-10
	FR2	DM1-347D6...	7.6	12	9.1	14.4	25	30	20	20	20	16	12	10	20-6	12-8
		DM1-34012...	12	16	14.4	19.2	30	40	30	30	25	25	10	10	20-6	12-8
		DM1-34016...	16	23	19.2	27.6	45	60	40	40	32	32	8	10	20-6	12-8
	FR3	DM1-34023...	23	31	26.5	35.7	60	70	50	50	\	40	8	8	20-6	10-8
FR4	DM1-34031...	31	38	35.7	43.7	70	70	70	70	\	50	6	8	20-2	8-6	
	DM1-34038...	38	46	43.7	52.9	80	80	80	80	\	58	4	8	20-2	8-6	
525 Vac to 600 Vac 50/60 Hz 3 phase	FR2	DM1-354D5...	4.5	7.5	6	9	15	30	\	\	\	10	14	10	20-6	12-8
		DM1-357D5...	7.5	10	9	12	20	40	\	\	\	16	14	10	20-6	12-8
		DM1-35010...	10	13.5	12	16.2	25	50	\	\	\	25	10	10	20-6	12-8
	FR3	DM1-35013...	13.5	18	16.2	21.6	35	70	\	\	\	25	10	8	20-6	10-8
	FR4	DM1-35018...	18	22	21.6	26.4	40	80	\	\	\	32	8	8	20-2	8-6
		DM1-35022...	22	27	26.4	32.4	50	100	\	\	\	40	8	8	20-2	8-6

Notes:

① Line and motor cable size is selected according to UL 508C Table 40.3 for copper conductor rated 75°C. Use only with copper wire rated 75°C here. Size requirements for other different wire types are defined in the National Electrical Code®, ANSI/NFPA® 70.

② Earthing conductor size is determined by the maximum overcurrent device rating used ahead of the drive according to UL 508C Table 6.4.

③ If power cubes or bypass are used, a UL listed Class RK5, J, T or equivalent fuse is recommended.

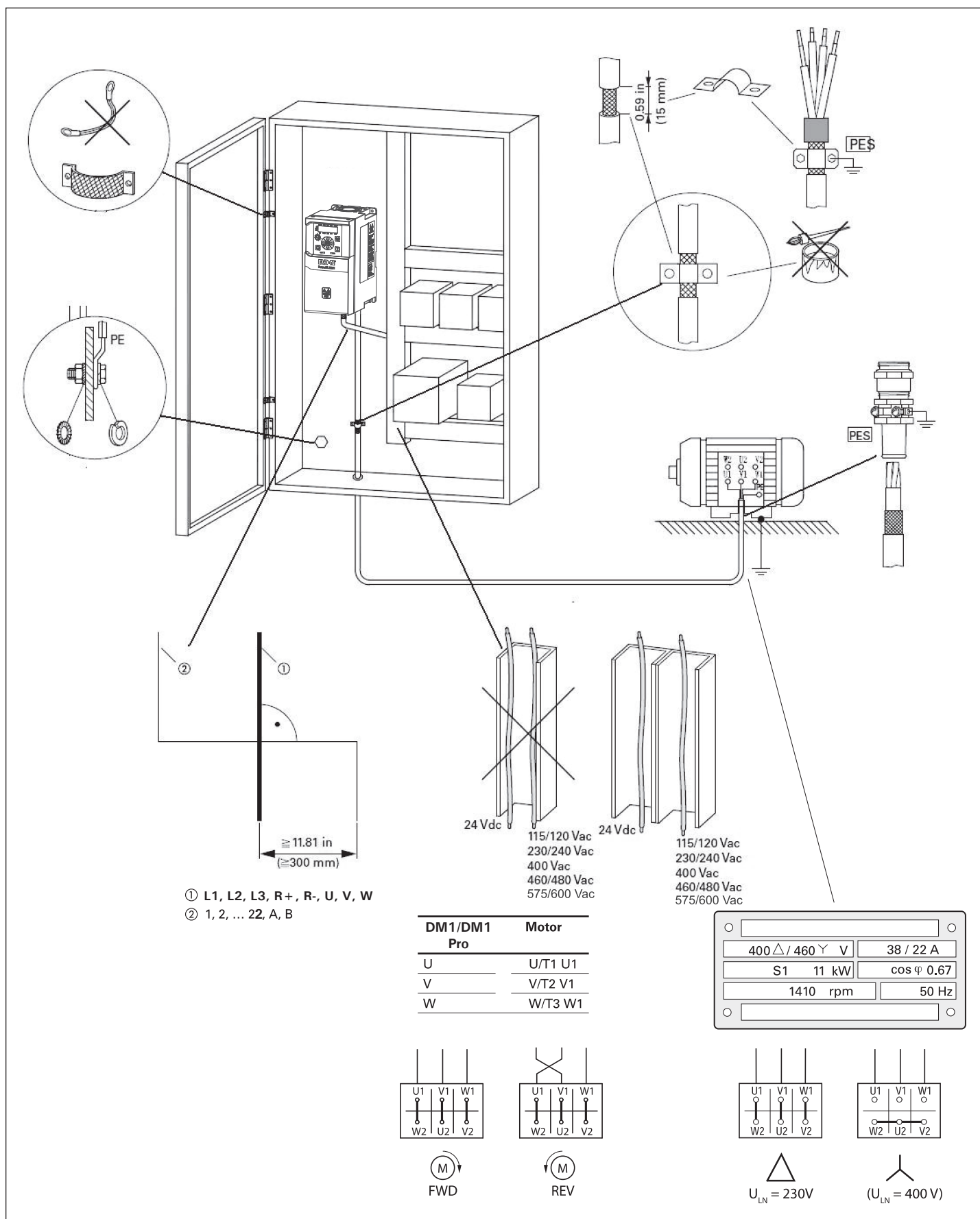
Table 6. International cable and fuse sizes. ①②**IEC Cable and Fuse Sizes**

Input voltage	Frame size	Catalog number	Output rating		Input rating		IEC application									
			CT/IH current amps	VT/IL current amps	CT/IH current amps	VT/IL current amps	Recommended fuse rating 100 kAIC	Maximum allowed use rating 100 kAIC	Recommended circuit breaker rating 100 kAIC (open type only for 3 phase)	Maximum allowed circuit breaker rating 100 kAIC (open type only for 3 phase)	Maximum allowed miniature circuit breaker rating 10/14 kAIC	Recommended Type E CMC rating 65 kAIC	IEC cable size line and motor mm²	IEC cable size ground mm²	Terminal size line and motor mm²	Terminal size ground mm²
100 Vac to 120 Vac 50/60 Hz 1 phase	FR1	DM1-111D6...	1.6	2.5	6.4	9.6	15	30	15	30	30	\	2.5	2.5	0.2-6	TBD
		DM1-113D0...	3	4.8	12	20	30	70	30	70	63	\	6	6	0.2-6	TBD
	FR2	DM1-114D8...	4.8	6.9	20	29	40	90	40	90	63	\	10	10	0.5-16	TBD
		DM1-116D9...	6.9	7.8	29	34.3	45	125	45	125	63	\	10	10	0.5-16	TBD
200 Vac to 240 Vac 50/60 Hz 1 phase	FR1	DM1-121D6...	1.6	2.5	3.2	5	10	15	15	15	15	\	2.5	2.5	0.2-6	TBD
		DM1-123D0...	3	4.8	6	9.6	20	30	20	30	30	\	2.5	2.5	0.2-6	TBD
		DM1-124D8...	4.8	7.8	10	16	30	60	30	60	63	\	4	4	0.2-6	TBD
	FR2	DM1-127D8...	7.8	11	16	23	35	80	35	80	63	\	6	6	0.5-16	TBD
		DM1-12011...	11	17.5	23	35	60	125	60	125	63	\	10	10	0.5-16	TBD
	FR3	DM1-12017...	17.5	25.3	39.6	49.6	80	200	80	200	\	\	16	16	0.5-16	TBD
200 Vac to 240 Vac 50/60 Hz 3 phase	FR1	DM1-321D6...	1.6	2.5	2.1	3.3	6	6	15	15	5	6.3	2.5	2.5	0.2-6	1.5-6.0
		DM1-323D0...	3	4.8	3.9	5.8	10	15	15	15	10	6.3	2.5	2.5	0.2-6	1.5-6.0
		DM1-324D8...	4.8	7.8	5.8	9.4	15	20	15	15	15	10	2.5	2.5	0.2-6	1.5-6.0
		DM1-327D8...	7.8	11	9.4	13.2	20	30	20	20	20	16	4	4	0.2-6	1.5-6.0
	FR2	DM1-32011...	11	17.5	12.7	20.1	35	40	30	30	30	25	6	6	0.5-16	4.0-10
		DM1-32017...	17.5	25.3	20.1	29.1	45	60	45	45	40	32	10	10	0.5-16	4.0-10
	FR3	DM1-32025...	25.3	32.2	29.1	37	60	70	50	50	50	40	10	10	0.5-16	6.0-10
	FR4	DM1-32032...	32.2	48.3	35.4	53.1	80	100	80	80	\	\	25	16	0.5-35	10-16
		DM1-32048...	48.3	62.1	53.1	68.3	110	125	100	100	\	\	35	16	0.5-35	10-16
	380 Vac to 480 Vac 50/60 Hz 3 phase	FR1	DM1-341D5...	1.5	2.2	1.8	2.6	6	6	15	15	4	6.3	2.5	2.5	0.2-6
DM1-342D2...			2.2	4.3	2.6	5.2	10	10	15	15	8	6.3	2.5	2.5	0.2-6	1.5-6.0
DM1-344D3...			4.3	5.6	5.2	6.7	15	15	15	15	10	10	2.5	2.5	0.2-6	1.5-6.0
DM1-345D6...			5.6	7.6	6.7	9.1	15	30	15	15	15	10	2.5	2.5	0.2-6	1.5-6.0
FR2		DM1-347D6...	7.6	12	9.1	14.4	25	30	20	20	20	16	4	4	0.5-16	4.0-10
		DM1-34012...	12	16	14.4	19.2	30	40	30	30	25	25	6	6	0.5-16	4.0-10
		DM1-34016...	16	23	19.2	27.6	45	60	40	40	32	32	10	10	0.5-16	4.0-10
FR3		DM1-34023...	23	31	26.5	35.7	60	70	50	50	\	40	10	10	0.5-16	6.0-10
FR4		DM1-34031...	31	38	35.7	43.7	70	70	70	70	\	50	16	16	0.5-35	10-16
		DM1-34038...	38	46	43.7	52.9	80	80	80	80	\	58	25	16	0.5-35	10-16
525 Vac to 600 Vac 50/60 Hz 3 phase	FR2	DM1-354D5...	4.5	7.5	6	9	15	30	\	\	\	10	2.5	2.5	0.5-16	2.5-10
		DM1-357D5...	7.5	10	9	12	20	40	\	\	\	16	2.5	2.5	0.5-16	2.5-10
		DM1-35010...	10	13.5	12	16.2	25	50	\	\	\	25	6	6	0.5-16	4-10
	FR3	DM1-35013...	13.5	18	16.2	21.6	35	70	\	\	\	25	6	6	0.5-16	6-10
	FR4	DM1-35018...	18	22	21.6	26.4	40	80	\	\	\	32	10	10	0.5-35	10-16
		DM1-35022...	22	27	26.4	32.4	50	100	\	\	\	40	10	10	0.5-35	10-16

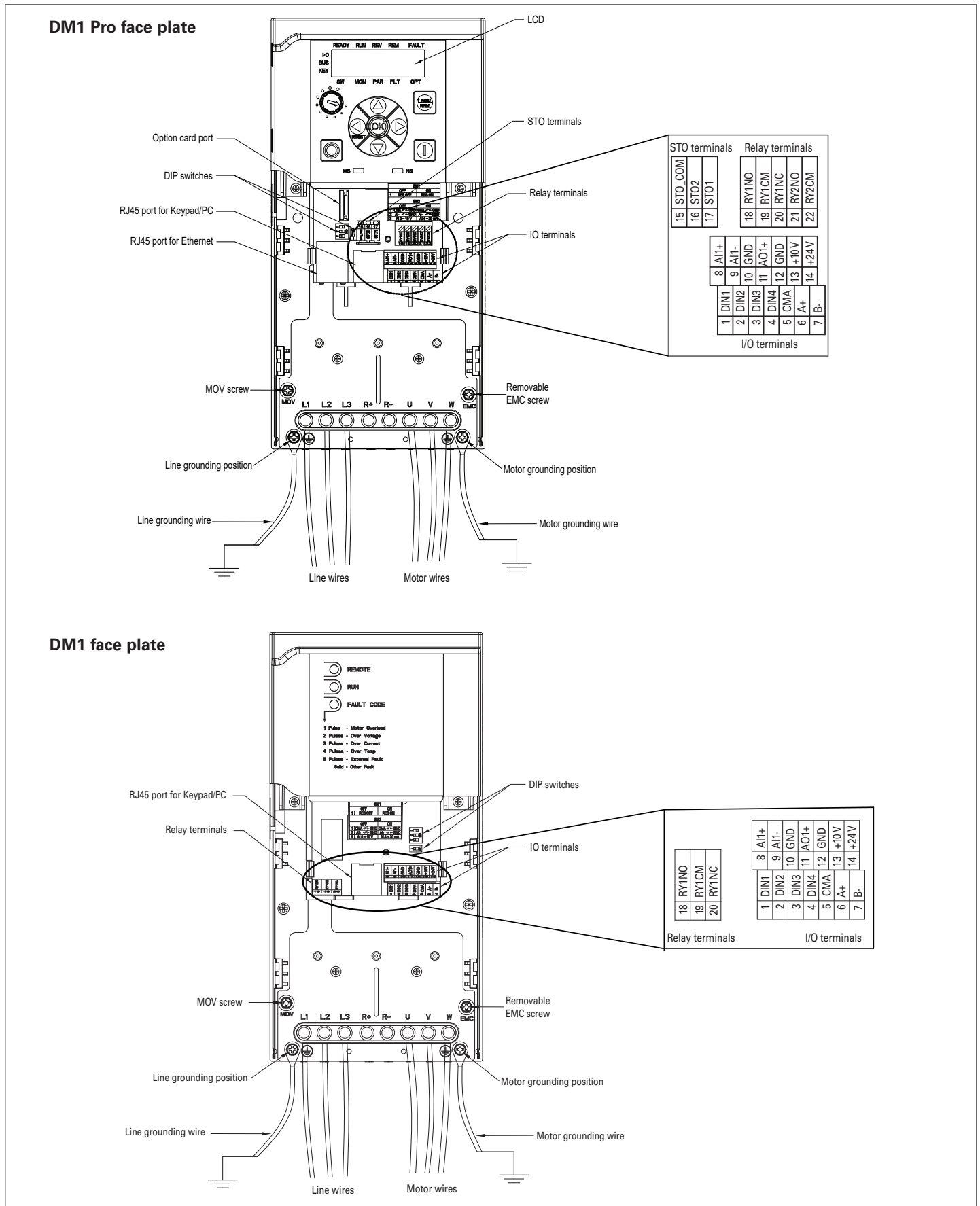
Notes:

- ① Line and motor cable size is selected according to IEC 60364-5-52:2009 Table B.52.4 for copper conductor with PVC insulation with a wiring condition of ambient temperature 30°C in air and an installation method of "B2" (cables in conduit and cable trunking systems). For other wiring conditions, please refer to the standard of IEC 60364-5-52:2009 for suitable cable sizes.
- ② Earthing conductor size is determined by the cross-sectional area of phase conductors according to IEC/EN 61800-5-1:2007 Table 5. So if phase conductor size is changed, earthing conductor size should also be changed accordingly.
- ③ If power cubes or bypass are used, a Class gG/gL fuse is recommended.

Installation overview for DM1



Control board layout



Factory-set control terminal functions

Table 7. I/O connection.

Default			Default		
SW1			SW2		
RES OFF	OFF 1	ON	RES ON	OFF 1	ON
				2	
				3	

CMA GND
 AI- GND
 AI 0 ~ 10 V

CMA GND
 AI- GND
 AI 4 ~ 20 mA

DM1

External wiring	Terminal	Short name	Name	Default setting	Description
	1	DI1	Digital input 1	Run forward	Starts the motor in the forward direction.
	2	DI2	Digital input 2	Run reverse	Start the motor in the reverse direction.
	3	DI3	Digital input 3	External fault	Triggers a fault in the drive.
	4	DI4	Digital input 4	Fault reset	Resets active faults in the drive.
	5	CMA	DI1 to DI4 common	Grounded	Allows for sourced input.
	6	A	RS-485 signal A	—	Fieldbus communication (Modbus RTU, BACNet).
	7	B	RS-485 signal B	—	Fieldbus communication (Modbus RTU, BACNet).
	8	AI1+ ①	Analog input 1	0 - 10 V	Voltage speed reference (programmable to 4 mA to 20 mA).
	9	AI1-	Analog input 1 ground	—	Analog input 1 common (ground).
	10	GND	I/O signal ground	—	I/O ground for reference and control.
	11	AO1+	Analog output 1	Output frequency	Shows output frequency to motor 0 - 60 Hz (4 mA to 20 mA).
	12	GND	I/O signal ground	—	I/O ground for reference and control.
	13	10 V	10 Vdc reference output	10.3 Vdc +/- 3%	10 Vdc reference voltage.
	14	24 V	24 Vdc control output	24 Vdc In/Out	Control voltage input/output (100 mA max.).
	18	R1NO	Relay 1 normally open	Run	Changes state when the drive is in the run state.
	19	R1CM	Relay 1 common		
	20	R1NC	Relay 1 normally closed		

Table 7. I/O connection (continued).

DM1 PRO

External wiring	Terminal	Short name	Name	Default setting	Description
	1	DI1	Digital input 1	Run forward	Starts the motor in the forward direction.
	2	DI2	Digital input 2	Run reverse	Start the motor in the reverse direction.
	3	DI3	Digital input 3	External fault	Triggers a fault in the drive.
	4	DI4	Digital input 4	Fault reset	Resets active faults in the drive.
	5	CMA	DI1 to DI4 common	Grounded	Allows for sourced input.
	6	A	RS-485 signal A	—	Fieldbus communication (Modbus RTU, BACNet).
	7	B	RS-485 signal B	—	Fieldbus communication (Modbus RTU, BACNet).
	8	AI1+ ①	Analog input 1	0 - 10 V	Voltage speed reference (programmable to 4 mA to 20 mA).
	9	AI1-	Analog input 1 ground	—	Analog input 1 common (ground).
	10	GND	I/O signal ground	—	I/O ground for reference and control.
	11	AO1+	Analog output 1	Output frequency	Shows output frequency to motor 0 - 60 Hz (4 mA to 20 mA).
	12	GND	I/O signal ground	—	I/O ground for reference and control.
	13	10 V	10 Vdc reference output	10.3 Vdc +/- 3%	10 Vdc reference voltage.
	14	24 V	24 Vdc control output	24 Vdc In/Out	Control voltage input/output (100 mA max.).
	15	STO_com	Safe torque common	—	Safe torque Off common.
	16	STO2	Safe torque Off 2	—	Safe torque Off 2 input.
	17	STO1	Safe torque Off 1	—	Safe torque Off 1 input.
	18	R1NO	Relay 1 normally open	Run	Changes state when the drive is in the run state.
	19	R1CM	Relay 1 common		
	20	R1NC	Relay 1 normally closed		
	21	R2NO	Relay 2 normally open	Fault	Changes state when the drive is in the fault state.
	22	R2CM	Relay 2 common		

Notes:

The above wiring demonstrates a SINK configuration. The SW2 position 1 is set to ON. If a SOURCE configuration is desired, wire 24 V to CMA and close the inputs to ground. When using the +10 V for AI1, SW2 position 2 set to ON.

① AI1+ support 10 K potentiometer.

UL cautions, warnings, and instructions

Wiring warnings for electrical practices and wire sizes

The Cautions, Warnings, and Instructions in this section summarize the procedures necessary to ensure an inverter installation complies with Underwriters Laboratories® guidelines.



(en)

Warning!

Use 60/75°C Cu wire only or equivalent.



(en)

Warning!

Open type equipment.



(en)

Warning!

Suitable for use on a circuit capable of delivering not more than 5,000 rms symmetrical amperes:

- 240 V maximum for DM1-32 models
- 500 V maximum for DM1-34 models
- 600 V maximum for DM1-35 models

Circuit breaker and fuse sizes

The adjustable frequency drive's connections to input power must include UL listed inverse time circuit breakers with 600 V rating, or UL listed fuses.

Technical support contact information

	Americas	EMEA	APAC
Website	www.eaton.com/drives	www.eaton.com/AfterSales	www.eaton.com.cn/electrical
Email	VFDaftermarketEG@eaton.com	AfterSalesEGBonn@eaton.com	CustomerServicePDCNA@eaton.com
Phone	1-877-386-2273 (8:00 a.m. to 6:00 p.m. Eastern Time U.S. [UTC-5]) 800-543-7038 (6:00 p.m. to 8:00 a.m. Eastern Time U.S. [UTC-5]) TRCDrivesTechSupport@eaton.com	+49 (0) 180 5 223822	800 9881203

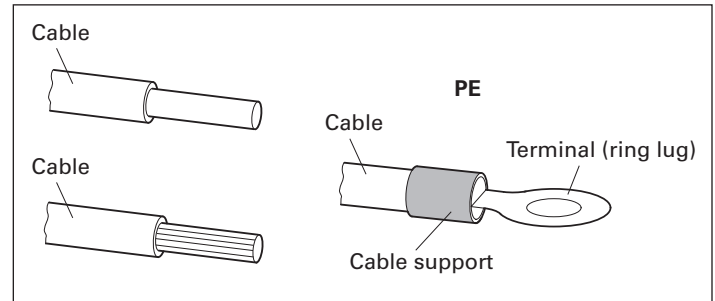
Wire connectors



(en)

Warning!

Field wiring connections must be made by a UL listed and CSA certified ring lug terminal connector sized for the wire gauge being used. The connector must be fixed using the crimping tool specified by the connector manufacturer.



Motor overload protection

DM1 adjustable frequency drives provide solid-state motor overload protection, which depends on the proper setting of the following parameter: P5.1.2 "current limit."

"The setting range is (0.2 * rated current) to (2 * rated current).



(en)

Warning!

When two or more motors are connected to the inverter, they cannot be protected by the electronic overload protection. Install an external thermal relay on each motor.

China ROHS 2 and WEEE Discard Statements

产品中有害物质的名称及含量

部件名称	有害物质					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
电池类	×	○	○	○	○	○
印刷电路组件	×	○	○	○	○	○
电源线插座端子	×	○	○	○	○	○
箱体五金类	×	○	○	○	○	○
开关 / 断路器类	○	○	×	○	○	○

本表格依据 SJ/T 11364 的规定编制。

○：表示该有害物质在该部件所有均质材料中的含量均在GB/T 26572规定的限量要求以下。

×：表示该有害物质至少在该部件的某一均质材料中的含量超出GB/T 26572规定的限量要求。

环保使用期限的免责条款：环保使用期限规定的具体期限仅为符合中华人民共和国的相应的法律规定，并非代表我向客户提供保证或负有任何义务。环保使用期限中假定客户按照操作手册在正常情况下使用本产品。对于本产品中配备的某些组合件（例如，装有电池的组合件）的环保使用期限，可能低于本产品的环保使用期限。



Eaton.com/recycling

The crossed-out wheeled bin symbol indicates that waste electrical and electronic equipment should not be discarded together with un-separated household waste, but must be collected separately. The product should be handed in for recycling in accordance with the local environmental regulations for waste disposal.

By separating waste electrical and electronic equipment, you will help reduce the volume of waste sent for incineration or land-fills and minimize any potential negative impact on human health and environment.

CERTIFICATE OF COMPLIANCE

Certificate Number
Report Reference
Date

A-E134360
E134360-20201029
2020-November-09

Issued to:

Eaton
W 126 N 7250 FLINT DR
MENOMONEE FALLS WI 53051-4404 US

**This is to certify that
representative samples of**

POWER CONVERSION EQUIPMENT
See Addendum Page for Product Designation(s).

Have been investigated by UL in accordance with the
Standard(s) indicated on this Certificate.

Standard(s) for Safety:

UL 61800-5-1 – ADJUSTABLE SPEED ELECTRICAL
POWER DRIVE SYSTEMS – PART 5-1: SAFETY
REQUIREMENTS – ELECTRICAL, THERMAL AND
ENERGY.

C22.2 No. 274-17 - Adjustable Speed Drives

Additional Information:

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<https://ic.ulprospector.com> for additional information

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Look for the UL Certification Mark on the product.



Barnes

Bruno Mahrenholz, Director North American Certification Program
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contact your UL Customer Service Representative at ULCustomerService@ul.com

CERTIFICATE OF COMPLIANCE

Certificate Number
Report Reference
Date

A-E134360
E134360-20201029
2020-November-09

This is to certify that representative samples of the product as specified on this certificate were tested according
to the current UL requirements

Enclosed or Open Type Adjustable Speed Drives, Cat. DM1, followed by 1, followed by 2, followed
by TD6, 3D0, 4D8, 7D8, 011 or 017, followed by E or N, followed by B or N, followed by S or N,
followed by 20, followed by S or B, followed by blank, EM or AP.

Enclosed or Open Type Adjustable Speed Drives, Cat. DM1, followed by 1, followed by 1, followed
by TD6, 3D0, 4D8 or 6D9, followed by E or N, followed by B or N, followed by S or N, followed by 20,
followed by S or B, followed by blank, EM or AP.

Accessories, Plenum Rated NEMA 1 Kits for upgrading Open Type to Type 1 Enclosure for Plenum
Rated application, Models DXM-ACC-FR1N1PKIT, DXM-ACC-FR2N1PKIT, DXM-ACC-FR3N1PKIT,
DXM-ACC-FR4N1PKIT.



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contact your UL Customer Service Representative at ULCustomerService@ul.com

CERTIFICATE OF COMPLIANCE

Certificate Number A-E134360
Report Reference E134360-20200331
Issue Date 2020-APRIL-13

Issued to: Eaton
W 126 N 7250 FLINT DR
MENOMONEE FALLS WI 53051-4404

This certificate confirms that representative samples of POWER CONVERSION EQUIPMENT REFER ADDENDUM PAGE FOR MODELS

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL 61800-5-1 STANDARD FOR ADJUSTABLE SPEED ELECTRICAL POWER DRIVE SYSTEMS - PART 5-1: SAFETY REQUIREMENTS - ELECTRICAL, THERMAL AND ENERGY
CSA C22.2 NO. 274-17 ADJUSTABLE SPEED DRIVES IEC/ EN 61800-5-1 ADJUSTABLE SPEED ELECTRICAL POWER DRIVE SYSTEMS - PART 5-1: SAFETY REQUIREMENTS - ELECTRICAL, THERMAL AND ENERGY
Additional Information: See the UL Online Certifications Directory at <https://iq.ulprospector.com> for additional information.

This Certificate of Compliance does not provide authorization to apply the UL Mark. Only the UL Follow-Up Services Procedure provides authorization to apply the UL Mark.
Only those products bearing the UL Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.
Look for the UL Certification Mark on the product.

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Bruce Marenholz, Director North American Certification Program
UL LLC
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CERTIFICATE OF COMPLIANCE

Certificate Number A-E134360
Report Reference E134360-20200331
Issue Date 2020-APRIL-13

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

Enclosed or Open Type Adjustable Speed Drives, Cat. DM1, followed by 3, followed by 4, followed by 1D6, 2D2, 4D3, 5D6, 7D6, 012, 016, 023, 031 or 038, followed by E or N, followed by B or N, followed by S or N, followed by 20, followed by S or B, followed by blank, EM or AP.

Enclosed or Open Type Adjustable Speed Drives, Cat. DM1, followed by 3, followed by 2, followed by 1D6, 3D0, 4D8, 7D8, 011, 017, 025, 032 or 048, followed by E or N, followed by B or N, followed by S or N, followed by 20, followed by S or B, followed by blank, EM or AP.

Accessories, NEMA 1 Kits for upgrading Open Type to Type 1 Enclosure, Models DXM-ACC-FR1N1KIT, DXM-ACC-FR2N1KIT, DXM-ACC-FR3N1KIT, DXM-ACC-FR4N1KIT.

Accessories, PROFIBUS Module, Model No. DXM-NET-PROFIBUS.

Accessories, CANOPEN Module, Model No. DXM-NET-CANOPEN.

Accessories, SMARTWIRE Module, Model No. DXG-NET-SWD-IP20 and DXG-NET-SWD-IP54.

Accessories, Standard Keypad, Model No. DXG-KEY-LCD.

Accessories, Remote Keypad, Model No. DXG-KEY-RMTKIT.

Accessories, Remote Keypad Mounting Holder, Model No. DXG-KEY-HOLDER and DXG-KEY-HOLDER-BP.

Accessories, Software Cable, Model No. DXG-CBL-PCCABLE.

B. M. M.
Bruce Marenholz, Director North American Certification Program
UL LLC
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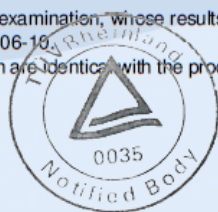


EC Type-Examination Certificate

Functional
Safetywww.tuv.com
ID 0600000000
Reg.-No.: 01/205/5753.02/21

Product tested	"Safe Torque Off" (STO) within PowerXL DM1 Series VFD of Eaton Corporation	Certificate holder	Eaton Corporation W126N7250 Flint Drive Menomonee Falls, WI 53051 USA
Type designation	PowerXL DM1 Series VFD; Details see actual "Revision List"		
Codes and standards	IEC 61800-5-2:2016 EN 61800-5-2:2007 EN 61800-5-2:2017 EN IEC 61800-3:2018 IEC 61800-5-1:2016 EN 61800-5-1:2007 + A1:2017	ISO 13849-1:2015 EN ISO 13849-1:2015 IEC 62061:2015 EN 62061:2005 + AC:2010 + A1:2013 + A2:2015 IEC 61508 Parts 1-7:2010	
Intended application	The safety function "Safe Torque Off" within PowerXL DM1 Series VFD complies with the requirements for SIL 2 according to EN / IEC 61508, EN / IEC 61800-5-2, SIL CL 2 according to EN / IEC 62061, as well as PL d / Cat. 3 according to EN ISO 13849-1 and can be used in applications up to these safety levels. Further the safety function can be used in applications according to IEC 60204-1:2016 / EN 60204-1:2018.		
Specific requirements	The instructions of Installation Manual and Safety Manual shall be considered.		
It is confirmed, that the product under test complies with the requirements for machines defined in Annex I of the EC Directive 2006/42/EC.			
Valid until 2026-06-16			

The issue of this certificate is based upon an examination, whose results are documented in Report No. 968/FSP 1991.02/21 dated 2021-06-16.
This certificate is valid only for products which are identical with the product tested.



Köln, 2021-06-16

Notified Body for Machinery, NB 0035

Dipl.-Ing. Jelena Stenzel

TÜV Rheinland Industrie Service GmbH, Am Grauen Stein, 51105 Köln / Germany
Tel.: +49 221 806-2434, Fax: +49 221 806-1354, E-Mail: industrie-service@de.tuv.com

www.fs-products.com
www.tuv.com

TÜVRheinland®
Precisely Right.

Doc. No.: EU-DoC-VFD-DM1-Basic-20210618

EU Declaration of Conformity

We, **Eaton Corporation**
W126N7250 Flint Drive, Menomonee Falls, WI 53051, USA

declare under our sole responsibility as manufacturer that the product (family), **PowerXL DM1 Series (DM1-3xxxxxB-N20B-...)** **Variable Frequency Drives**

provided that it is installed, maintained and used in the application intended for, with respect to the relevant manufacturer's instructions, installation standards and "good engineering practices", complies with the provisions of Council directive(s):

2014/35/EU	Low Voltage Directive
2014/30/EU	EMC Directive
2011/65/EU	RoHS Directive
2009/125/EC	Ecodesign Directive (Regulation 2019/1781)
2014/53/EU	Radio Emission Directive

based on compliance with European standard(s):

EN 61800-5-1:2007+A1:2017
EN 61800-3:2004/A1:2012 and EN IEC 61800-3:2018
EN IEC 63000:2018
EN 61800-9-2:2017
EN 62479:2010
ETSI EN 301 489-1 V2.2.3
ETSI EN 301 489-17 V3.2.2
ETSI EN 300 328 V2.1.1

Issued: 2021-06-18

Simon Chen

Simon Chen
VFD Engineering Manager

EATON
Powering Business Worldwide

Doc. No.: EU-DoC-VFD-DM1-Pro-20210618

EU Declaration of Conformity

We, **Eaton Corporation**
W126N7250 Flint Drive, Menomonee Falls, WI 53051, USA

declare under our sole responsibility as manufacturer that the product (family), **PowerXL DM1 Series (DM1-xxxxxB-S20S-...)** **Variable Frequency Drives**

provided that it is installed, maintained and used in the application intended for, with respect to the relevant manufacturer's instructions, installation standards and "good engineering practices", complies with the provisions of Council directive(s):

2014/35/EU	Low Voltage Directive
2014/30/EU	EMC Directive
2011/65/EU	RoHS Directive
2009/125/EC	Ecodesign Directive (Regulation 2019/1781)
2014/53/EU	Radio Emission Directive
2006/42/EC	Machinery Directive

based on compliance with European standard(s):

EN 61800-5-1:2007+A1:2017
EN 61800-3:2004/A1:2012 and EN IEC 61800-3:2018
EN IEC 63000:2018
EN 61800-9-2:2017
EN 62479:2010
ETSI EN 301 489-1 V2.2.3
ETSI EN 301 489-17 V3.2.2
ETSI EN 300 328 V2.1.1

EATON
Powering Business Worldwide

Doc No.: UK-DoC-VFD-DM1-Basic-20211217

Declaration of Conformity

We, **Eaton Corporation**
W126N7250 Flint Drive, Menomonee Falls, WI 53051, USA

declare under our sole responsibility as manufacturer that the product (family)

PowerXL DM1 Series (DM1-3xxxxB-N20B-...) Variable Frequency Drives

according to the list on the following pages and provided that it is installed, maintained and used in the application intended for, with respect to the relevant manufacturer's instructions, installation standards and "good engineering practices", complies with the statutory requirements:

2016 No.1101	Electrical Equipment (Safety) Regulations 2016
2016 No.1091	Electromagnetic Compatibility Regulations 2016
2012 No.3032	Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012
2021 No.745	Ecodesign for Energy-Related Products and Energy Information Regulations 2021
2017 No.1206	Radio Equipment Regulations 2017

based on compliance with the following standard(s):

EN 61800-5-1:2007+A1:2017
EN IEC 61800-3:2018
EN IEC 63000:2018
EN 61800-9-2:2017
EN 62479:2010
ETSI EN 301 489-1 V2.2.3
ETSI EN 301 489-17 V3.2.4
ETSI EN 300 328 V2.2.2

Issued: 2021-12-17

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VFD Engineering Manager

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Powering Business Worldwide

Page 1 of 4

Doc No.: UK-DoC-VFD-DM1-Pro-20211217

Declaration of Conformity

We, **Eaton Corporation**
W126N7250 Flint Drive, Menomonee Falls, WI 53051, USA

declare under our sole responsibility as manufacturer that the product (family)

PowerXL DM1 Series (DM1-xxxxxB-S20S-...) Variable Frequency Drives

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based on compliance with the following standard(s):

EN 61800-5-1:2007+A1:2017
EN IEC 61800-3:2018
EN IEC 63000:2018
EN 61800-9-2:2017
EN 62479:2010
ETSI EN 301 489-1 V2.2.3
ETSI EN 301 489-17 V3.2.4
ETSI EN 300 328 V2.2.2

Issued: 2021-12-17

Simon Chen
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VFD Engineering Manager

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Powering Business Worldwide

Page 1 of 7

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