

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

Montagehandleiding
Montagevejledning
Οδηγίες εγκατάστασης
Instruções de montagem
Monteringsanvisning
Asennusohje
Návod k montáži

Paigaldusjuhend
Szerelési utasítás
Montāžas instrukcija
Montavimo instrukcija
Instrukcja montażu
Navodila za montažo
Návod na montáž

Монтажни инструкции
Instrucţiuni de montaj
Upute za montažu
Montaj talimatı
Інструкція з монтажу
منشور التعليمات
Инструкция Леафлет
Bruksanvisning

 (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 electotécnica 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 smějí 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 elektro speciālisti un darbam ar elektrotehnikām iekārtām instruetās 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. (no) Elektrisk strøm! Livsfare! Kun fagkyndige eller instruerte personer skal utføre følgende operasjoner.	(sl) Življenjska nevarnost zaradi električnega toka! Spodaj opisana dela smejo izvajati samo elektro strokovnjaki in elektrotehnično poučene osebe. (sk) Nebezpečstvo ohrozenia života elektrickým prúdom! Práce, ktoré sú nižšie opísané, smú vykonávať iba elektroodborníci 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 والتتركيب الا من قبل العاملين المدربين! (sb) Električna struja! Opasnost po život! Само веште или обучене особе могу да обављају следеће операције.
--	--	---

EATON

Powering Business Worldwide

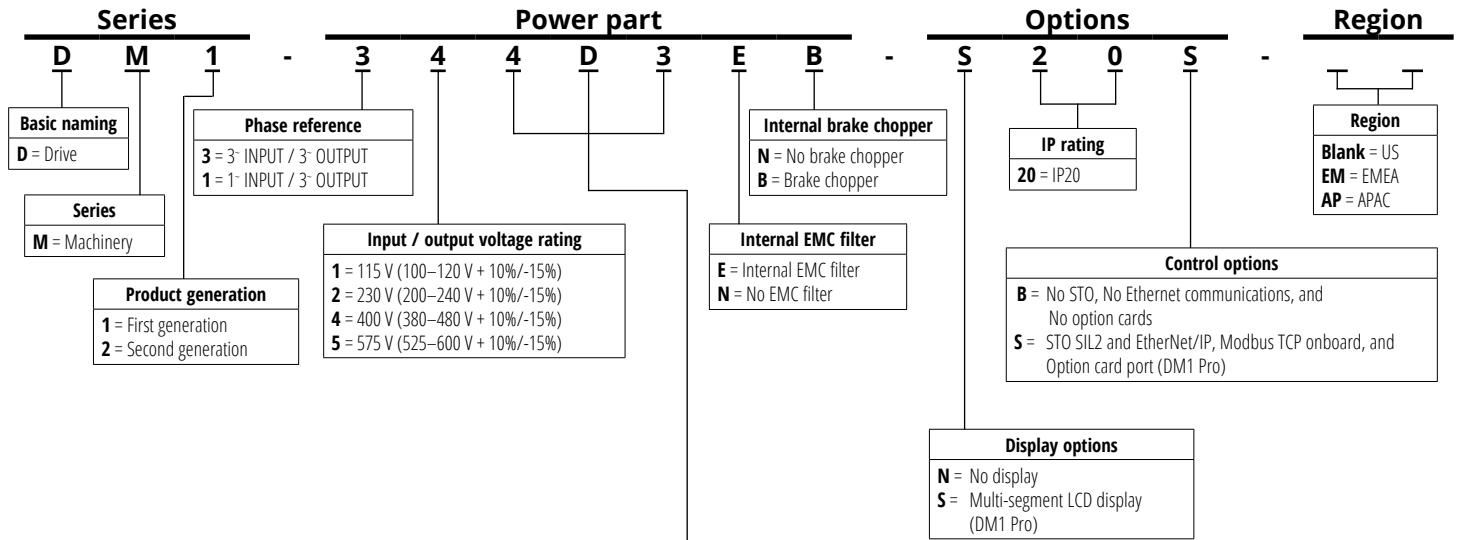


Eaton.com/EcoDesign-VFD
MZ040046EN



Eaton.com/documentation

MN040060: Installation
MN04009: Application
MN040051: Communication
MN040055: WebUI
MN040062: Profinet

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
-----	-----	-----	-----

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 |
| 5) DXM-NET-PROFINET | DM1 PROFINET communication card |

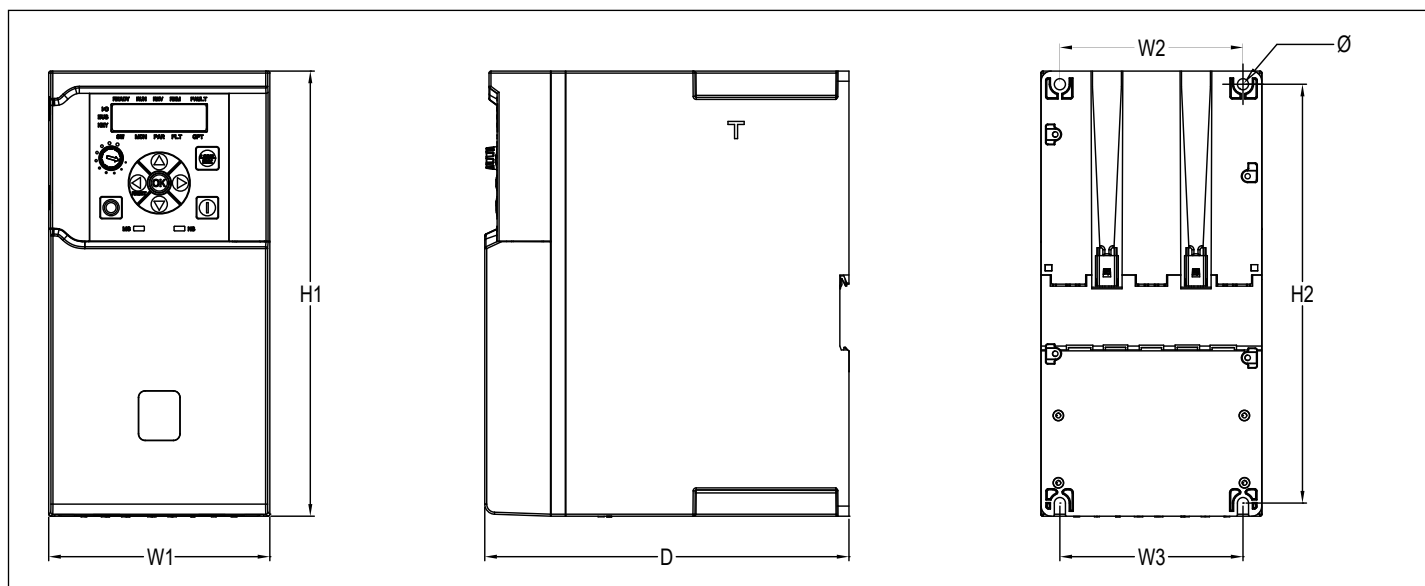
(en) **Dimensions and weights**(de) **Abmessungen und Gewichte**(fr) **Encombremets et poids**(es) **Dimensiones y pesos**(it) **Dimensioni e pesi**(zh) **尺寸和重量**(ru) **Размеры и вес**(nl) **Afmetingen en gewichten**(da) **Mål og vægt**(el) **Διαστάσεις και βάρη**(pt) **Medições e pesos**(sv) **Dimensioner och vikter**(fi) **Mitat ja painot**(cs) **Rozměry a hmotnosti**(et) **Mõõtmed ja kaalud**(hu) **Méreték és Súly**(lv) **Izmēri un svars**(lt) **Matmenys ir svoriai**(pl) **Wymiary i masy**(sl) **Dimenzije in teže**(sk) **Rozmery a hmotnosti**(bg) **Размери и тегло**(ro) **Dimensiuni și greutate**(hr) **Dimenzije i težina**(tr) **Boyutlar ve ağırlıklar**(uk) **Габаритні розміри й вага**(ar) **الأبعاد والأوزان**(sb) **Dimenzije i težine**(no) **Dimensjoner og vekt**

Table 1. Approximate mounting dimensions in inches (mm)

Frame size	Dimensions							Weight lb (kg)
	D	H1	H2	W1	W2	W3	Φ	
FR1	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	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	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	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

de

Montage

fr

Montage

es

Montaje
- it

Montaggio

zh

安装

ru

Монтаж

nl

Montering
- da

Montering

el

Τοποθέτηση

pt

Montagem

sv

Montering
- fi

Asennus

cs

Montáž

et

Päigaldamine

hu

Felszerelés
- lv

Montāža

lt

Montavimas

pl

Montaż

sl

Montaža
- sk

Montáž

bg

Монтаж

ro

Montarea

hr

Montaža
- tr

Montaj

uk

Монтаж

ar

التركيب

sb

Монтажа

no

Montering

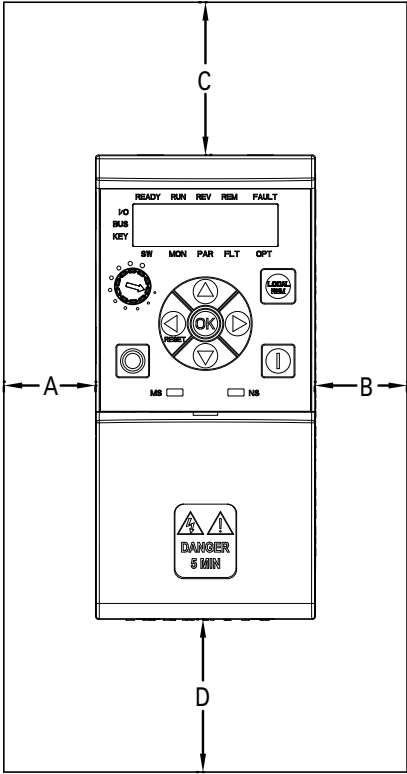
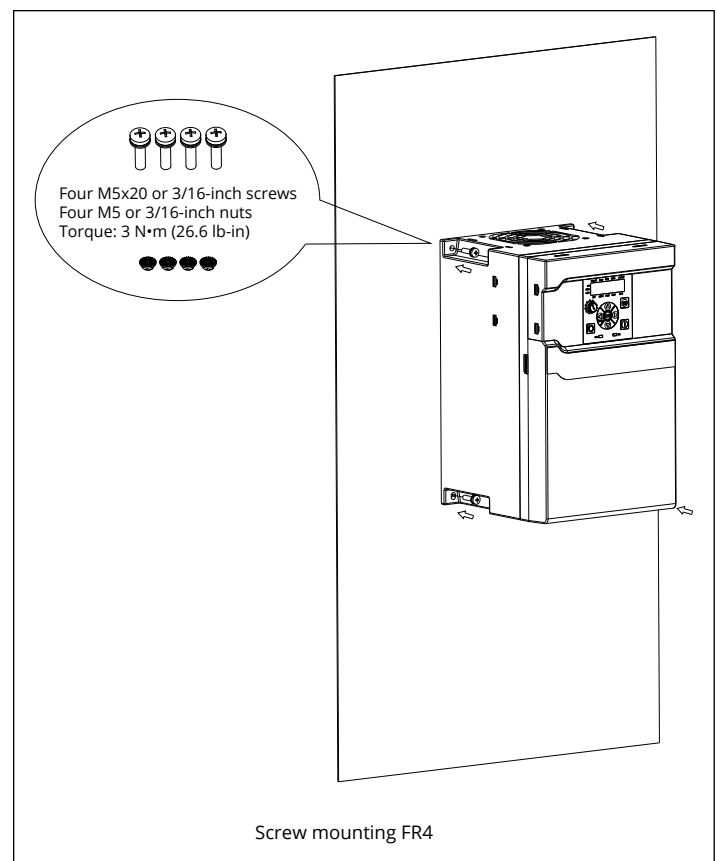
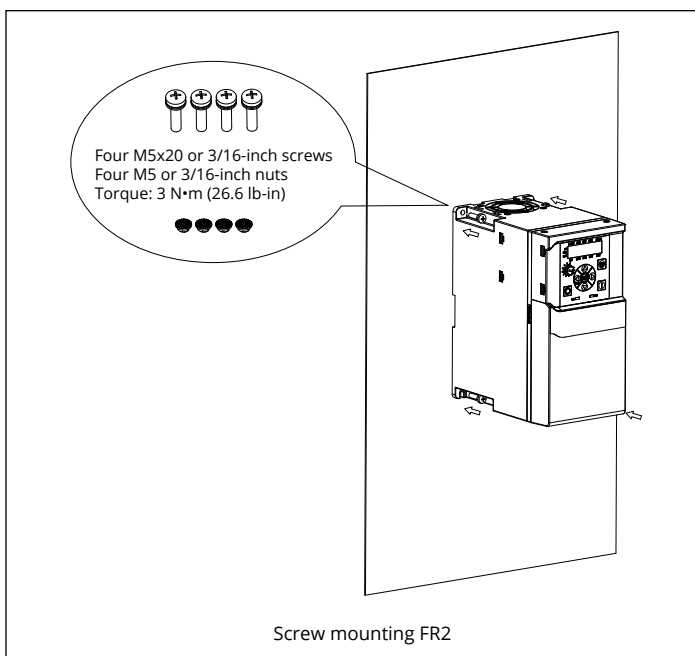
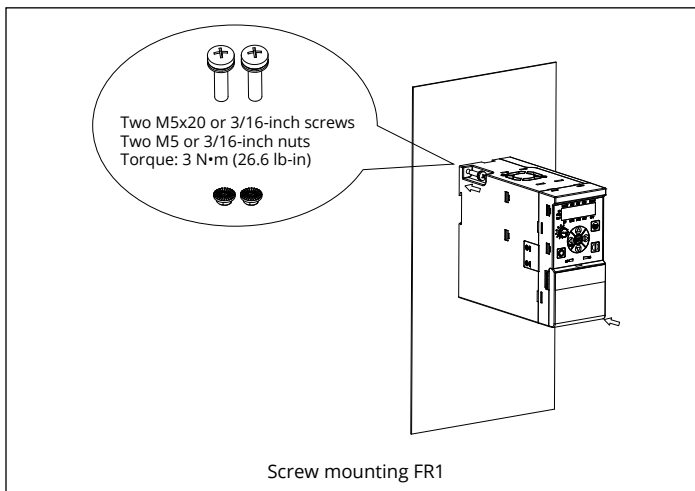
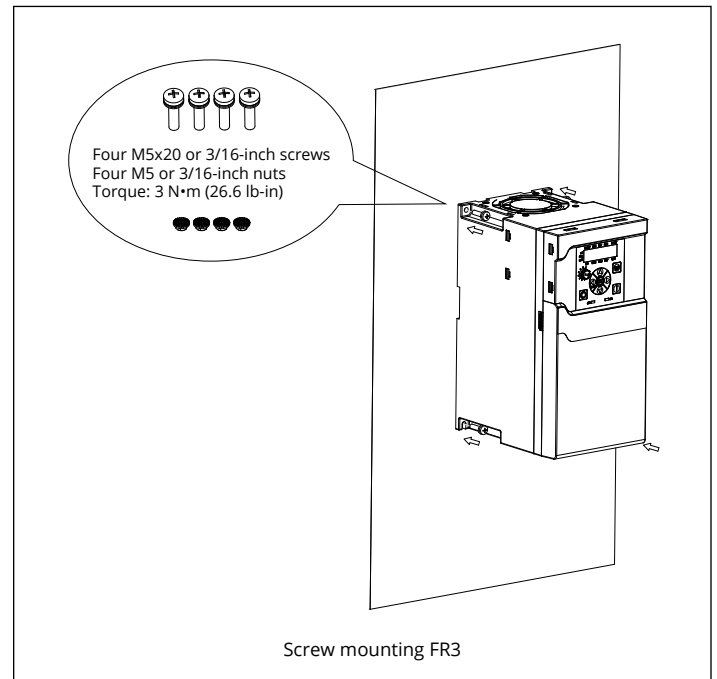
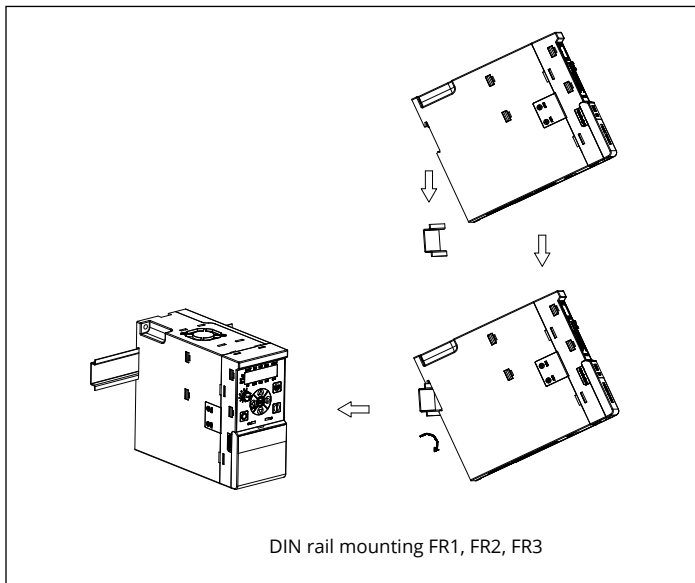


Table 2. Approximate space requirements in inches (mm)

Input voltage	Frame size	Mounting clearance imperial				Airflow CFM (m³/h)
		A	B	C	D	
100 Vac to 120 Vac 50/60 Hz single-phase	FR1	0	0	1.97 (50)	1.97 (50)	14.83 (25.2)
	FR2	0	0	1.97 (50)	1.97 (50)	24.72 (42.0)
200 Vac to 240 Vac 50/60 Hz single-phase	FR1	0	0	1.97 (50)	1.97 (50)	14.83 (25.2)
	FR2	0	0	1.97 (50)	1.97 (50)	37.43 (63.6)
	FR3	0	0	1.97 (50)	1.97 (50)	42.37 (72.0)
200 Vac to 240 Vac 50/60 Hz three-phase	FR1	0	0	1.97 (50)	1.97 (50)	14.83 (25.2)
	FR2	0	0	1.97 (50)	1.97 (50)	24.72 (42.0)
	FR3	0	0	1.97 (50)	1.97 (50)	42.37 (72.0)
	FR4	0	0	1.97 (50)	1.97 (50)	75.56 (128.4)
380 Vac to 480 Vac 50/60 Hz three-phase	FR1	0	0	1.97 (50)	1.97 (50)	14.83 (25.2)
	FR2	0	0	1.97 (50)	1.97 (50)	37.43 (63.6)
	FR3	0	0	1.97 (50)	1.97 (50)	58.61 (99.6)
	FR4	0	0	1.97 (50)	1.97 (50)	57.56 (97.8)
525 Vac to 600 Vac 50/60 Hz three-phase	FR2	0	0	1.97 (50)	1.97 (50)	37.43 (63.6)
	FR3	0	0	1.97 (50)	1.97 (50)	42.37 (72.0)
	FR4	0	0	1.97 (50)	1.97 (50)	57.56 (97.8)

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

DM1 mounting methods

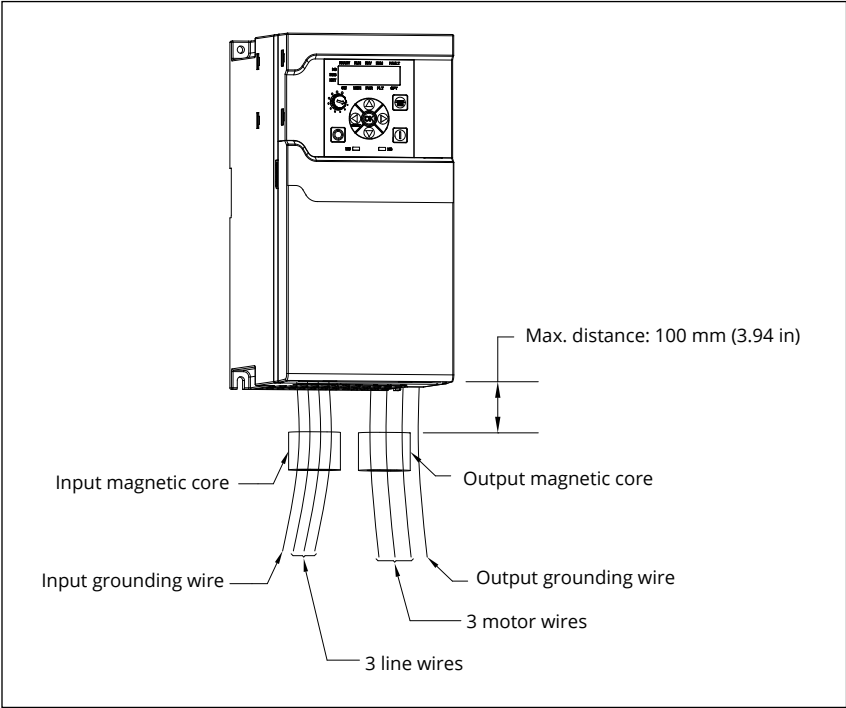


Table 3. DM1/DM1 Pro EMI version wiring summary

Voltage rating	Frame size	Input core	Quantity of line wires	Input terminal block	Input grounding wire assembly	Output core	Output grounding wire assembly
Single-phase	FR1	Yes	2	L2, L3	Run through input core	Yes	Do not run through the output core
	FR2	Yes	2	L2, L3	Run through input core	Yes	Do not run through the output core
	FR3	Yes	2	L2, L3	Run through input core	No	No output core
Three-phase 230/480 V	FR1	Yes	3	L1, L2, L3	Run through input core	Yes	Do not run through the output core
	FR2	Yes	3	L1, L2, L3	Run through input core	Yes	Do not run through the output core
	FR3	Yes	3	L1, L2, L3	Run through input core	Yes	Do not run through the output core
	FR4	Yes	3	L1, L2, L3	Run through input core	Yes	Do not run through the output core
Three-phase 575 V	FR2	No	3	L1, L2, L3	No input core	Yes	Do not run through the output core
	FR3	Yes	3	L1, L2, L3	Do not run through input core	Yes	Do not run through the output core
	FR4	Yes	3	L1, L2, L3	Do not run through input core	Yes	Do not run through the output core

(en) NOTICE

Connect only in voltage-free state!

(de) ACHTUNG

Nur im spannungsfreien Zustand anschließen!

(fr) ATTENTION

Raccordez l'appareil uniquement hors tension !

(es) CUIDADO

¡Conectar únicamente en estado sin tensión!

(it) AVVISO

Collegare solo in assenza di tensione!

(zh) 注意

必須在斷電狀態下進行連接！

(ru) ВНИМАНИЕ

Подключать только в обесточенном состоянии!

(nl) OPGELET

Alleen in spanningsloze toestand aansluiten!

(da) VIGTIGT

Må kun tilsluttes i spændingsfri tilstand!

(el) ΕΠΑΓΓΡΥΠΝΗΣΗ

Συνδέστε μόνο όταν δεν επικρατεί τάση!

(pt) ADVERTÊNCIA

Ligar apenas com a tensão desligada!

(sv) OBSERVERA

Får endast anslutas i spänningsfritt tillstånd!

(fi) ILMOITUS

Kytke vain jännitteettömässä tilassa!

(cs) UPOZORNĚNÍ

Připojte jen při zcela odpojeném napájení!

(et) TÄHELEPANU

Ühendada ainult pingevabas olekus!

(hu) FIGYELEM

Csak feszültségmentes állapotban csatlakoztassa!

(lv) UZMANĪBU

Pieslēgt tikai tad, kad nenotiek sprieguma padeve!

(lt) DĖMESIO

Prijungti tik tada, kai išjungta įtampa!

(sb) НАПОМЕНА

Повезујте само у стању без напона!

(pl) UWAGA

Podłączać zawsze po uprzednim odłączeniu od zasilania elektrycznego!

(sl) POZOR

Napravo priključite le, ko ni pod napetostjo!

(sk) UPOZORNENIE

Napájat' len v stave bez napätia!

(bg) ПРЕДУПРЕЖДЕНИЕ

Свързвайте само, когато уреда не е под напрежение!

(ro) ATENTJE

Conectați doar când aparatul nu se află sub tensiune!

(hr) POZOR

Priključujte samo u beznaponskom stanju!

(tr) BİLDİRİM

Sadece gerilim sıfırken bağlayın!

(uk) ПОВІДОМЛЕННЯ

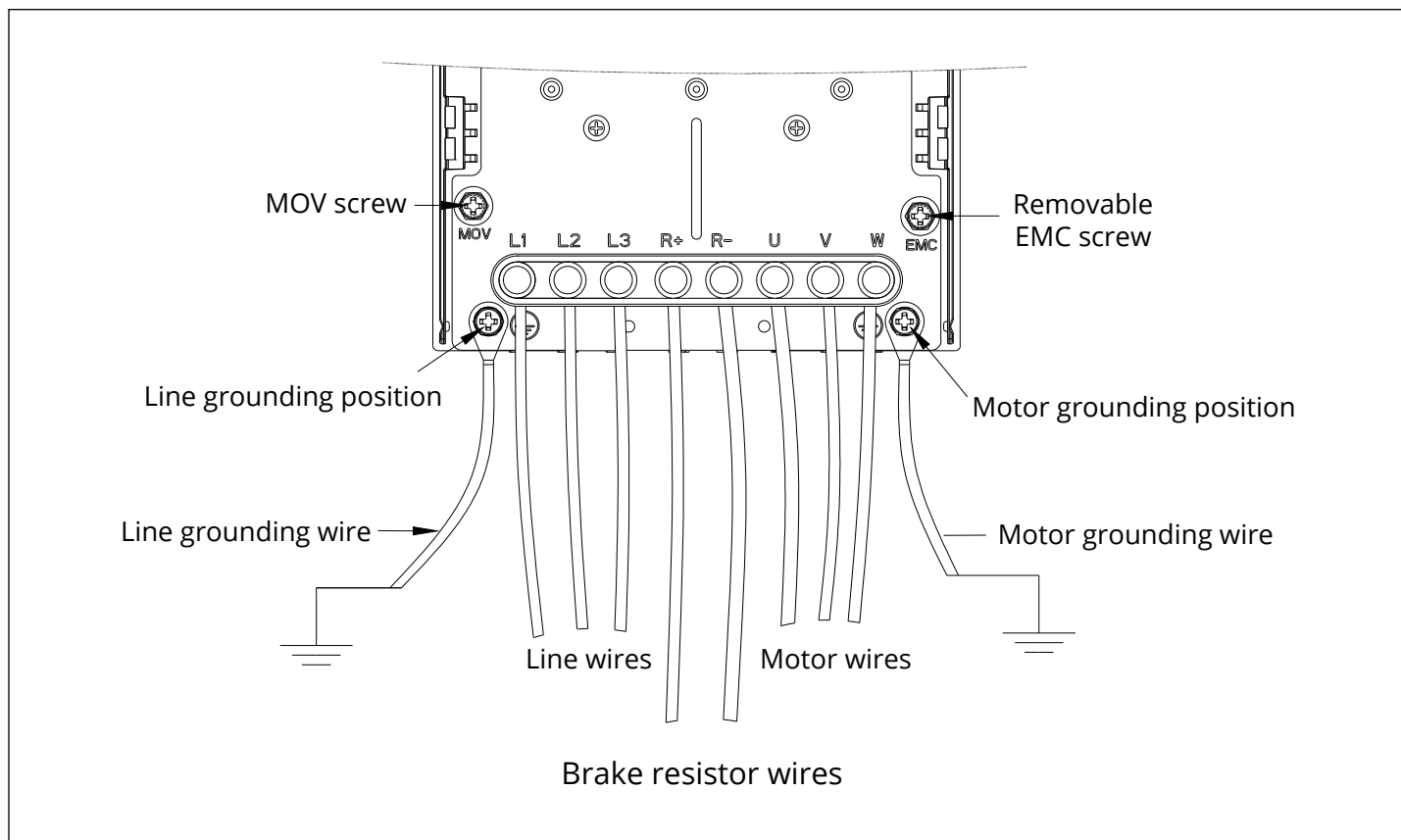
Підключати лише за відсутності напруги!

(ar) ملاحظة

!!التوصيل فقط في حال عدم الفولتية!!

(no) MERKNAD

Koble kun i spenningsfri tilstand!

Ground wiring

Input power and motor cable stripping lengths

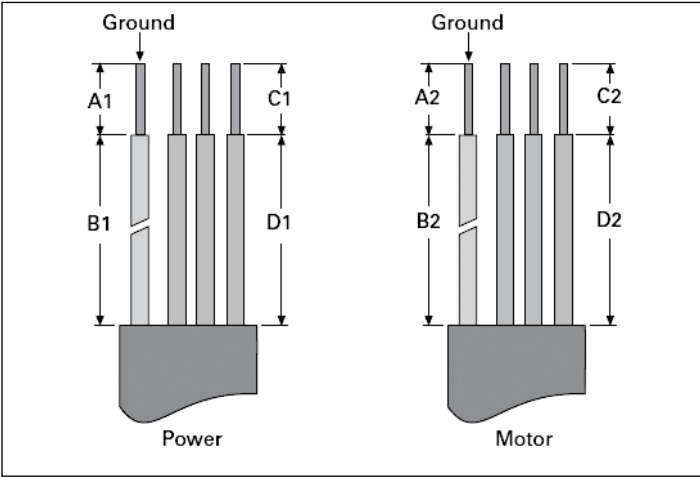


Table 4. Stripping lengths in inches (mm)

Frame size	Power wiring				Motor wiring			
	A1	B1	C1	D1	A2	B2	C2	D2
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)

Table 5. Tool requirements for hardware terminals

Frame size	Connection and torque			
	Power wire torque in-lb (N·m)	Power wire screwdriver (mm)	Ground wire torque in-lb (N·m)	Ground wire screwdriver (mm)
FR1	4.4 (0.5)	Slot type 4*0.8	7.1 (0.8)	Phillips PH1
FR2	10.5 (1.2)	Slot type 5*1	7.1 (0.8)	Phillips PH2
FR3	10.5 (1.2)	Slot type 5*1	14.2 (1.6)	Phillips PH2
FR4	33 (3.73)	Slot type 6*1.2	14.2 (1.6)	Phillips PH2

Table 6. Connection sizes and torques ①②

Frame size	Size and torque			
	Power wire size AWG (mm²)	Power wire torque in-lb (N·m)	Ground wire size AWG (mm²)	Ground wire torque in-lb (N·m)
FR1	18-8 (0.2-6)	4.4 (0.5)	16-8 (1.5-6)	7.1 (0.8)
FR2	20-6 (0.5-16)	10.5 (1.2)	12-6 (4.0-10)	7.1 (0.8)
FR3	20-6 (0.5-16)	10.5 (1.2)	8-6 (6.0-10)	14.2 (1.6)
FR4	20-2(0.5-35)	33 (3.73)	8-6(10-16)	14.2 (1.6)

① Strip the motor and power cables as shown above.

② Both UL® and IEC tools may be used.

Cable and fuse guidelines

Table 7. North America cable and fuse sizes ①②③

UL cable and fuse sizes			Output rating		Input rating		UL application							
Input voltage	Frame size	Drive catalog number	CT/I _n current amps	VT/I _n current amps	CT/I _n current amps	VT/I _n current amps	Recommended fuse rating (Class J, T, CF or CC) 100 kAIC ①	Recommended miniature inverse-time molded case circuit breaker (max. rating) 10/14 kAIC ①	Recommended Type E CMC rating 65 kAIC ②	Recommended time molded case circuit breaker rating 100 kAIC (open type only for three-phase) ①	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 single-phase	FR1	DM1-111D6...	1.6	2.5	6.4	10	30	30	\	30	14	10	18-8	16-8
		DM1-113D0...	3	4.8	13.5	20	70	63	\	70	10	8	18-8	16-8
	FR2	DM1-114D8...	4.8	6.9	20	26.4	90	63	\	90	8	8	20-6	12-6
		DM1-116D9...	6.9	7.8	26.4	30	125	63	\	125	8	6	20-6	12-6
200 Vac to 240 Vac 50/60 Hz single-phase	FR1	DM1-121D6...	1.6	2.5	4	6.5	15	15	\	15	14	14	18-8	16-8
		DM1-123D0...	3	4.8	8	11	30	30	\	30	14	10	18-8	16-8
		DM1-124D8...	4.8	7.8	11	17	60	63	\	60	10	8	18-8	16-8
	FR2	DM1-127D8...	7.8	11	18	23	80	63	\	80	10	8	20-6	12-6
		DM1-12011...	11	17.5	23	35	125	63	\	125	8	6	20-6	12-6
	FR3	DM1-12017...	17.5	25.3	38	49.6	200	\	\	200	6	6	20-6	8-6
200 Vac to 240 Vac 50/60 Hz three-phase	FR1	DM1-321D6...	1.6	2.5	2.1	3.3	6	5	XTPR6P3BC1 + XTPAXLSA or PKZM0-6.3 + BK25/3-PKZ0-E	15	14	14	18-8	16-10
		DM1-323D0...	3	4.8	3.9	5.8	15	10	XTPR6P3BC1 + XTPAXLSA or PKZM0-6.3 + BK25/3-PKZ0-E	15	14	14	18-8	16-10
		DM1-324D8...	4.8	7.8	5.8	9.4	20	15	XTPR010BC1 + XTPAXLSA or PKZM0-10 + BK25/3-PKZ0-E	15	14	12	18-8	16-10
		DM1-327D8...	7.8	11	9.4	13.2	30	20	XTPR016DC1 + XTPAXLSAD or PKZM4-16 + BK50/3-PKZ4-E	20	12	10	18-8	16-10
	FR2	DM1-32011...	11	17.5	12.7	20.1	40	30	XTPR025DC1 + XTPAXLSAD or PKZM4-25 + BK50/3-PKZ4-E	30	10	10	20-6	12-8
		DM1-32017...	17.5	25.3	20.1	29.1	60	40	XTPR032DC1 + XTPAXLSAD or PKZM4-32 + BK50/3-PKZ4-E	45	8	10	20-6	12-8
	FR3	DM1-32025...	25.3	32.2	29.1	37	70	50	XTPR040DC1 + XTPAXLSAD or PKZM4-40 + BK50/3-PKZ4-E	50	8	8	20-6	10-8
	FR4	DM1-32032...	32.2	48.3	35.4	53.1	100	\	\	80	4	8	20-2	8-6
		DM1-32048...	48.3	62.1	53.1	68.3	125	\	\	100	3	6	20-2	8-6
	FR1	DM1-341D5...	1.5	2.2	1.8	2.6	6	4	XTPR6P3BC1 + XTPAXLSA or PKZM0-6.3 + BK25/3-PKZ0-E	15	14	14	18-8	16-10
		DM1-342D2...	2.2	4.3	2.6	5.2	10	8	XTPR6P3BC1 + XTPAXLSA or PKZM0-6.3 + BK25/3-PKZ0-E	15	14	14	18-8	16-10
		DM1-344D3...	4.3	5.6	5.2	6.7	15	10	XTPR010BC1 + XTPAXLSA or PKZM0-10 + BK25/3-PKZ0-E	15	14	14	18-8	16-10
		DM1-345D6... *	5.6	7.6	6.7	9.1	30	15	XTPR010BC1 + XTPAXLSA or PKZM0-10 + BK25/3-PKZ0-E	15	14	10	18-8	16-10
380 Vac to 480 Vac 50/60 Hz three-phase	FR2	DM1-347D6...	7.6	12	9.1	14.4	30	20	XTPR016DC1 + XTPAXLSAD or PKZM4-16 + BK50/3-PKZ4-E	20	12	10	20-6	12-8
		DM1-34012...	12	16	14.4	19.2	40	25	XTPR025DC1 + XTPAXLSAD or PKZM4-25 + BK50/3-PKZ4-E	30	10	10	20-6	12-8
		DM1-34016...	16	23	19.2	27.6	60	32	XTPR032DC1 + XTPAXLSAD or PKZM4-32 + BK50/3-PKZ4-E	40	8	10	20-6	12-8
		DM1-34023..	23	31	26.5	35.7	70	\	XTPR040DC1 + XTPAXLSAD or PKZM4-40 + BK50/3-PKZ4-E	50	8	8	20-6	10-8
	FR4	DM1-34031...	31	38	35.7	43.7	70	\	XTPR050DC1 + XTPAXLSAD or PKZM4-50 + BK50/3-PKZ4-E	70	6	8	20-2	8-6
		DM1-34038...	38	46	43.7	52.9	80	\	XTPR058DC1 + XTPAXLSAD or PKZM4-58 + BK50/3-PKZ4-E	80	4	8	20-2	8-6

① Can be any UL listed type with below ratings.

② Due to UL listing, only can be below Eaton types. Short-circuit rated 25 kA Max. for 600/347 Vac applications.

③ Earthing conductor size is determined by the maximum overcurrent device rating used ahead of the drive according to UL 61800-5-1.

Note: "*" means Output VT 4 kW 8.4 A at 400 V three-phase 10.1 A Input.

Table 7. North America cable and fuse sizes (continued) ①②③

UL cable and fuse sizes			Output rating		Input rating		UL application							
Input voltage	Frame size	Drive catalog number	CT/I _n current amps	VT/I _L current amps	CT/I _n current amps	VT/I _L current amps	Recommended fuse rating (Class J, T, CF or CC) 100 kAIC ①	Recommended miniature inverse-time molded case circuit breaker (max. rating) 10/14 kAIC ①	Recommended Type E CMC rating 65 kAIC ②	Recommended inverse-time molded case circuit breaker rating 100 kAIC (open type only for three-phase) ①	NEC wire size line and motor AWG	NEC wire size ground AWG	Terminal size line and motor AWG	Terminal size ground AWG
525 Vac to 600 Vac 50/60 Hz three-phase	FR2	DM1-354D5...	4.5	7.5	6	9	30	\	XTPR010BC1 + XTPAXLSA or PKZM0-10 + BK25/3-PKZ0-E	\	14	10	20-6	12-8
		DM1-357D5...	7.5	10	9	12	40	\	XTPR016DC1 + XTPAXLSAD or PKZM4-16 + BK50/3-PKZ4-E	\	14	10	20-6	12-8
		DM1-35010...	10	13.5	12	16.2	50	\	XTPR025DC1 + XTPAXLSAD or PKZM4-25 + BK50/3-PKZ4-E	\	10	10	20-6	12-8
	FR3	DM1-35013...	13.5	18	16.2	21.6	70	\	XTPR025DC1 + XTPAXLSAD or PKZM4-25 + BK50/3-PKZ4-E	\	10	8	20-6	10-8
	FR4	DM1-35018...	18	22	21.6	26.4	80	\	XTPR032DC1 + XTPAXLSAD or PKZM4-32 + BK50/3-PKZ4-E	\	8	8	20-2	8-6
		DM1-35022...	22	27	26.4	32.4	100	\	XTPR040DC1 + XTPAXLSAD or PKZM4-40 + BK50/3-PKZ4-E	\	8	8	20-2	8-6

① Can be any UL listed type with below ratings.

② Due to UL listing, only can be below Eaton types. Short-circuit rated 25 kA Max. for 600/347 Vac applications.

③ Earthing conductor size is determined by the maximum overcurrent device rating used ahead of the drive according to UL 61800-5-1.

Note: “*” means Output VT 4 kW 8.4 A at 400 V three-phase 10.1 A Input.

Table 8. International cable and fuse sizes ①②

IEC cable and fuse sizes			Output rating		Input rating		IEC application							
Input voltage	Frame size	Catalog number	CT/I _H current amps	VT/I _L current amps	CT/I _H current amps	VT/I _L current amps	Recommended fuse (max. rating) 100 kAIC ③	Recommended miniature circuit breaker (max. rating) 10/14 kAIC	Recommended Type E CMC (max. rating) 65 kAIC	Recommended circuit breaker (max. rating) 100 kAIC (Open type only for three-phase)	IEC cable size line and motor mm ²	IEC cable size ground mm ²	Terminal size line and motor mm ²	Terminal size ground mm ²
100 Vac to 120 Vac 50/60 Hz single-phase	FR1	DM1-111D6	1.6	2.5	6.4	10	30	30	\	30	2.5	2.5	0.2-6	1-6
		DM1-113D0	3	4.8	13.5	20	70	63	\	70	6	6	0.2-6	1-6
	FR2	DM1-114D8	4.8	6.9	20	26.4	90	63	\	90	10	10	0.5-16	1-10
		DM1-116D9	6.9	7.8	26.4	30	125	63	\	125	10	10	0.5-16	1-10
200 Vac to 240 Vac 50/60 Hz three-phase	FR1	DM1-121D6	1.6	2.5	4	6.5	15	15	\	15	2.5	2.5	0.2-6	1-6
		DM1-123D0	3	4.8	8	11	30	30	\	30	2.5	2.5	0.2-6	1-6
		DM1-124D8	4.8	7.8	11	17	60	63	\	60	6	6	0.2-6	1-6
	FR2	DM1-127D8	7.8	11	18	23	80	63	\	80	6	6	0.5-16	1-10
		DM1-12011	11	17.5	23	35	125	63	\	125	10	10	0.5-16	1-10
	FR3	DM1-12017	17.5	25.3	38	49.6	200	\	\	200	16	16	0.5-16	1-16
200 Vac to 240 Vac 50/60 Hz three-phase	FR1	DM1-321D6	1.6	2.5	2.1	3.3	6	5	6.3	15	2.5	2.5	0.2-6	1.5-6
		DM1-323D0	3	4.8	3.9	5.8	15	10	6.3	15	2.5	2.5	0.2-6	1.5-6
		DM1-324D8	4.8	7.8	5.8	9.4	20	15	10	15	2.5	2.5	0.2-6	1.5-6
		DM1-327D8	7.8	11	9.4	13.2	30	20	16	20	4	4	0.2-6	1.5-6
	FR2	DM1-32011	11	17.5	12.7	20.1	40	30	25	30	6	6	0.5-16	4-10
		DM1-32017	17.5	25.3	20.1	29.1	60	40	32	45	10	10	0.5-16	4-10
	FR3	DM1-32025	25.3	32.2	29.1	37	70	50	40	50	10	10	0.5-16	6-10
	FR4	DM1-32032	32.2	48.3	35.4	53.1	100	\	\	80	25	16	0.5-35	10-16
		DM1-32048	48.3	62.1	53.1	68.3	125	\	\	100	35	16	0.5-35	10-16
	380 Vac to 480 Vac 50/60 Hz three-phase	FR1	DM1-341D5	1.5	2.2	1.8	2.6	6	4	6.3	15	2.5	2.5	0.2-6
DM1-342D2			2.2	4.3	2.6	5.2	10	8	6.3	15	2.5	2.5	0.2-6	1.5-6
DM1-344D3			4.3	5.6	5.2	6.7	15	10	10	15	2.5	2.5	0.2-6	1.5-6
DM1-345D6 *			5.6	7.6	6.7	9.1	30	15	10	15	2.5	2.5	0.2-6	1.5-6
FR2		DM1-347D6	7.6	12	9.1	14.4	30	20	16	20	4	4	0.5-16	4-10
		DM1-34012	12	16	14.4	19.2	40	25	25	30	6	6	0.5-16	4-10
		DM1-34016	16	23	9.2	27.6	60	32	32	40	10	10	0.5-16	4-10
FR3		DM1-34023	23	31	26.5	35.7	70	\	40	50	10	10	0.5-16	6-10
FR4		DM1-34031	31	38	35.7	43.7	70	\	50	70	16	16	0.5-35	10-16
		DM1-34038	38	46	43.7	52.9	80	\	58	80	25	16	0.5-35	10-16
525 Vac to 600 Vac 50/60 Hz three-phase	FR2	DM1-354D5	4.5	7.5	6	9	30	\	10	\	2.5	2.5	0.5-16	2.5-10
		DM1-357D5	7.5	10	9	12	40	\	16	\	2.5	2.5	0.5-16	2.5-10
		DM1-35010	10	13.5	12	16.2	50	\	25	\	6	6	0.5-16	4-10
	FR3	DM1-35013	13.5	18	16.2	21.6	70	\	25	\	6	6	0.5-16	6-10
	FR4	DM1-35018	18	22	21.6	26.4	80	\	32	\	10	10	0.5-35	10-16
		DM1-35022	22	27	26.4	32.4	100	\	40	\	10	10	0.5-35	10-16

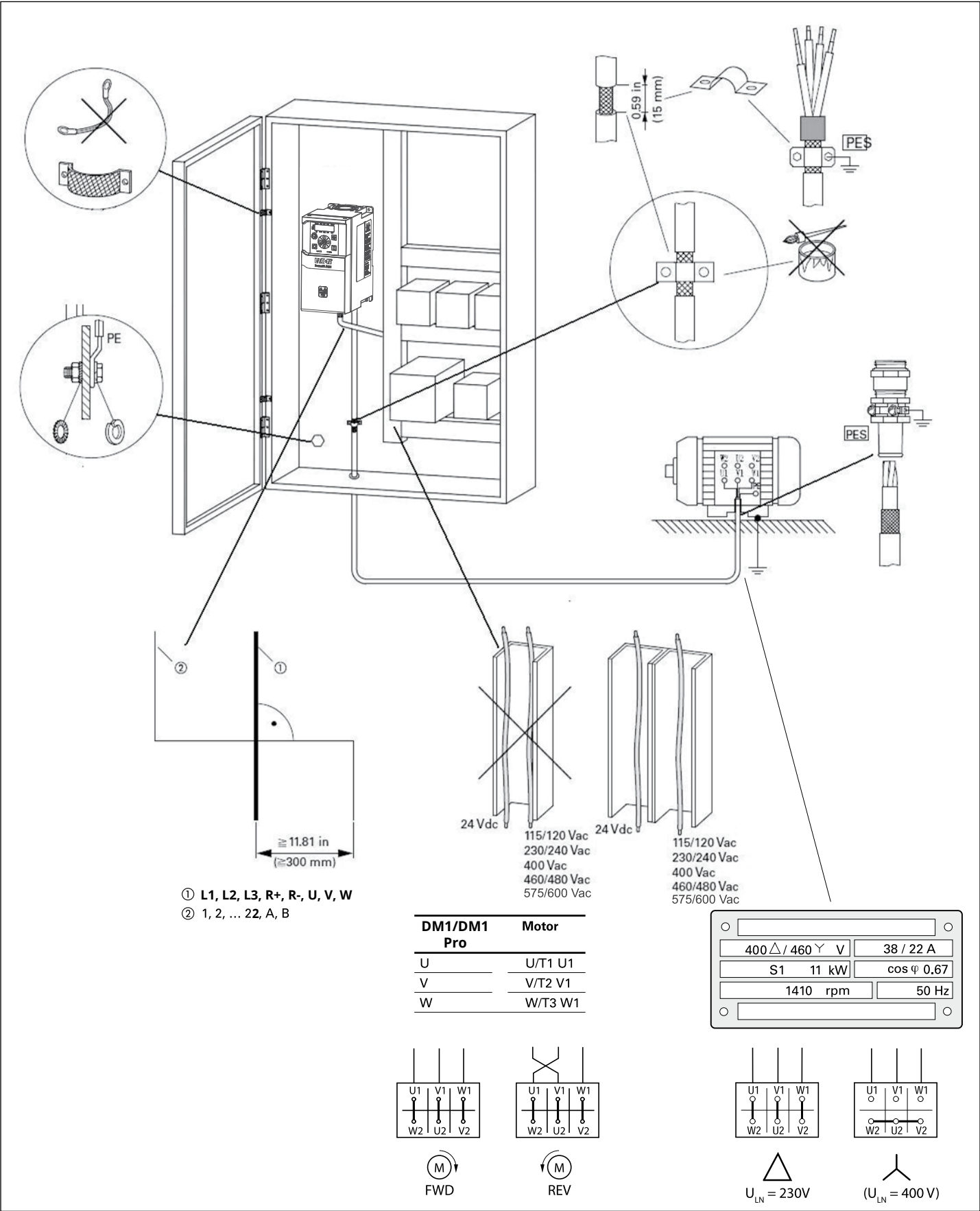
① Line and motor cable size is selected according to IEC 60364-5-52 for copper conductor with PVC insulation with a wiring condition of ambient temperature 30 °C in air and an installation method of "B2" (cables in conduit and cable trunking systems). For other wiring conditions, please refer to the standard of IEC 60364-5-52:2009 or suitable cable sizes.

② Earthing conductor size is determined by the cross-sectional area of phase conductors according to IEC/EN 61800-5-1. So if phase conductor size is changed, earthing conductor size should also be changed accordingly.

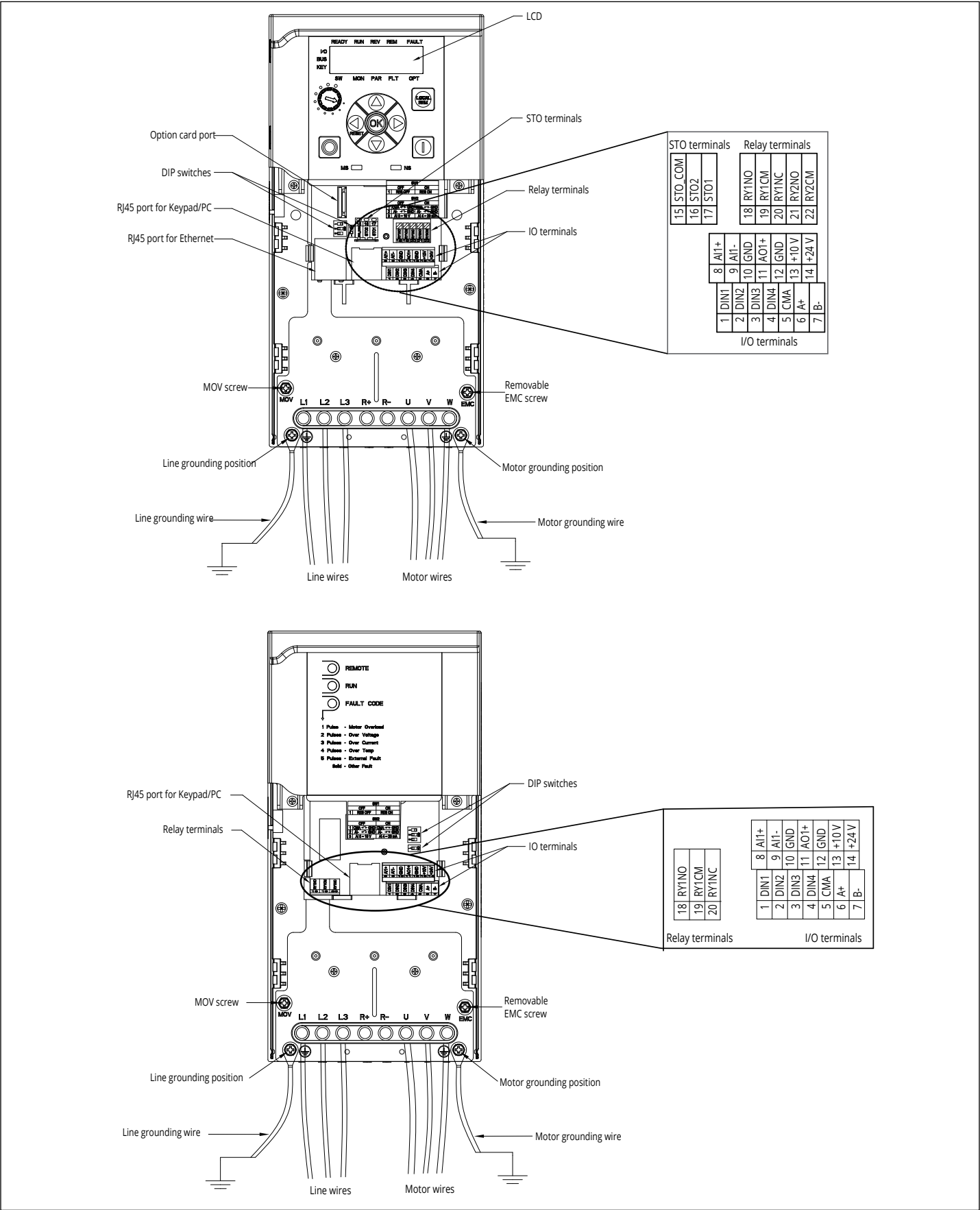
③ If power cubes or bypass are used, a class gG/gL fuse is recommended.

Note: "*" means Output VT 4 kW 8.4 A at 400 V three-phase 10.1 A Input.

Installation overview for DM1



Control board layout



Factory-set control terminal functions

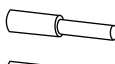
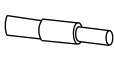
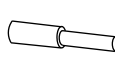
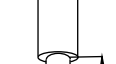
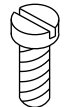
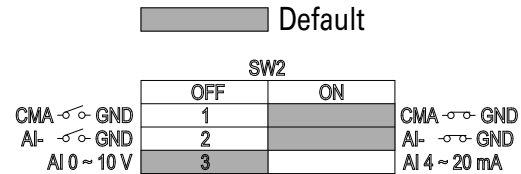
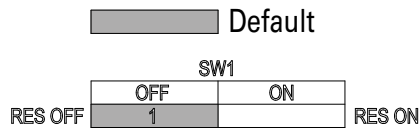
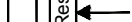
									
mm ²	mm ²	AWG	mm	in	AI/DI		RO (DM1 only)		mm
Nm	Nm				lb-in	lb-in	Nm	lb-in	
0.5-1.5	0.5-1.5	28-16	7	0.28	0.2	1.73	0.5	4.5	2*0.5

Table 9. I/O connection



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 maximum)
	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		

① AI1+ support 10 K potentiometer.

Note: 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.

Table 9. 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 maximum)
	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		

① AI1+ support 10 K potentiometer.

Note: 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.

CAUTION In the territory of the EU Directive the frequency-controlled devices and their accessories must be taken into operation only when the machine has been determined to fulfill the protection requirements of Machinery Directive 2006/42/EC. Ensure EMC-compliant installation. Lay control and communication cables spatially separated from the motor cable. Ensure a large contact area connection between cable screen and PE. VORSICHT Im Geltungsbereich der EG-Richtlinien dürfen die frequenzgesteuerten Geräte und deren Zubehör nur dann in Betrieb genommen werden, wenn festgestellt wird, dass die Maschine die Schutzanforderungen der Maschinenrichtlinie 2006/42/EG erfüllt. EMV-gerechter Aufbau. Steuer- und Netzlleitungen räumlich getrennt von der Motorleitung verlegen. Leitungsschirm großflächig mit PE verbinden. AVERTISSEMENT En application des directives européennes, les convertisseurs de fréquence et leurs accessoires ne doivent être mis en service que s'il a été vérifié que la machine répond aux exigences de la directive machines 2006/42/CE. Montage conforme aux règles de la CEM. Eloigner les câbles de commande et de réseau des câbles puissance. Roler lo blindage au PE en assurant de grandes surfaces de contact. ATENCIÓN En el campo de aplicación de la normativa CE, los dispositivos controlados por frecuencia y sus correspondientes accesorios sólo deberán ponerse en marcha cuando se asegure que la máquina cumple con las exigencias de seguridad de la normativa de máquinas 2006/42/CE. El montaje debe cumplir CEM. Los cables de mando y de conexión a red se deben instalar independientemente del cable de conexión al motor. El cable apantallado se debe conectar a masa utilizando una amplia superficie de contacto. ATTENZIONE Nel campo di validità delle direttive CE, gli apparecchi a controllo di frequenza e i loro accessori possono essere messi in esercizio soltanto se si verifica che la macchina soddisfa i requisiti di sicurezza della direttiva macchine 2006/42/CE. Montaggio secondo CEM. Disporre i cavi comandi e di alimentazione separati dal cavo del motore. Collegare lo schermo del cavo con PE con un'ampia superficie. 小心 根据欧盟设备一致性规范，安装频率控制设备及其配件时，应确保设备满足机器规范 2006/42/EG 中关于设备保护的要求。 按照电磁兼容规范正确安装，应将控制电缆和电源电缆与电机电缆分开。大面积采用 PE 包裹电缆。 ОСТОРОЖНО В сфере действия директивы ЕС устройства с частотным управлением и их оснащение должны вводиться в эксплуатацию только в том случае, если установлено, что данное оборудование соответствует требованиям по защите Директивы о машинном оборудовании 2006/42/EC. Сборка соответственно электромагнитной совместимости. Линии управления и электросети прокладывать в пространственном отношении отдельно от линии двигателя. Силовой экран соединять с PE по большой площади. VOORZICHTIG Binnen het geldigheidsgebied van de EC-richtlijnen mogen de frequentiegeregelde apparaten en de toebehoren daarvan alleen in bedrijf worden genomen, wanneer wordt vastgesteld, dat de machine aan de veiligheidsvoorschriften van de machinerichtlijn 2006/42/EG voldoet. EMC-conforme constructie. Besturings- en netkabels ruimtelijk gescheiden van de motorkabel leggen. Kabelafscherming over groot oppervlak met PE verbinden. FORSIGTIG I det område, hvor EF-direktiverne er gældende, må det frekvensstyrte udstyr og dets tilbehør kun tages i anvendelse, hvis det konstateres, at maskinen opfylder beskyttelseskravene i maskindirektivet 2006/42/EF. EMC-korrekt installation. Træk styre- og netledninger rumligt adskilt fra motorledningen. Sørg for en stor kontaktfldo mellem PES ledningsafskærmning og PE. ΠΡΟΖΟΧΗ Στο πεδίο εφαρμογής των οδηγιών της ΕΚ, οι ηλεκτρονικές μέσος συχνότητας συσκευές και τα παρελκόμενά τους επιτρέπεται να τίθενται σε λειτουργία μόνο εφόσον διαπιστωθεί ότι το μηχανήμα πληροί τις απαιτήσεις προστασίας της οδηγίας της ΕΚ για τα μηχανήματα 2006/42/ΕΚ. Κατάσκευη σύμφωνα με τις απαιτήσεις ΗΜΣ. Έγκαθίστατε τους αγωγούς ελέγχου και δικτύου ανεξάρτητα από τον αγωγό του κινητήρα. Συνδέετε τη θωράκιση των αγωγών σε μεγάλη επιφάνεια με τη γείωση. CUIDADO No âmbito das directivas da CE, os aparelhos comandados por frequência e os respectivos acessórios só podem ser postos em operação se for comprovado que a máquina atende às exigências da protecção da directiva de máquinas 2006/42/CE. Estrutura com compatibilidade electromagnética. Dispor os fios de comando e de rede separados do fio do motor. Ligar uma área grande da blindagem do cabo com o PE. FÖRSIKTIG I giltighetsområdet för EG-direktiven får de frekvensstyrda apparaterna och deras tillbehör endast tagas i drift när man fastställt att maskinen uppfyller skyddskraven i maskindirektiv 2006/42/EG. EMC-anpassad uppbyggnad. Styr- och nätledningar dras avskilda från motorledningarna. Förbind ledningskärn över ett brett område med PE. HUOMIO EU-direktiivin voimassaoloalueella taajuusohjattut laitteet ja niiden varusteet saa ottaa käyttöön vain silloin, kun todetaan, että kone täyttää koneidirektiivin 2006/42/EY suojausvaatimukset. EMC-mukainen rakenne. Ohjaus- ja verkkojohtot on asennettava tilalouitiseiksi erotettuina. Johtonsuojau on liitettävä laajasti maadoitukseen. POZOR V rozsahu platnosti směrnice ES smí být frekvenčně řízené přístroje a jejich příslušenství uvedeny do provozu jedině tehdy, pokud je zjištěno, že stroj splňuje požadavky ochrany stanovené směrnici 2006/42/ES o strojích zařízeních. Nástavba odpovídající směrnici EMC. Řídící a síťové vedení pokládejte prostorově oddělená od vedení motoru. Stínění vedení spojte vcelkoplošně s PE. FÖRSIKTIG Innenför EU-direktivets område må frekvensstyrte enheter och tillbehör kun tas i drift när det er fastslått at maskinen oppfyller beskyttelseskravene i maskindirektiv 2006/42/EF. Sørg for EMC-kompatibel installasjon. Legg kontroll- og kommunikasjonskabler romlig adskilt fra motorkabelen. Sørg for en stor kontaktfelt mellom kabelskjerming og PE.	ETTEVAATUST EU-direktiivi kehtivuspiirkonnas võib sagedusjuhtivaid seadmeid ja nende lisaseadmeid kasutusele võtta ainult siis, kui on kindlaks tehtud, et masin vastab masinadirektiivi 2006/42/EÜ kaitsenõuetele. Elektromagnetilisele ühilduvusele vastav ohutus. Juhtimis- ja võrgukaablid paigaldada mootori toitekaablist ruumiliselt eraldatuna. Kaabli kaitsesekraan ühendada ulatuslikult tahtlusmaandusega. VIGYÁZAT Az EK irányelvek hatályosságja területén a frekvenciavezérelt készülékeket és azok tartozékait csak akkor szabad üzembe helyezni, ha megállapítást nyert, hogy a gép megfelel a gépek biztonságáról szóló, 2006/42/EK számú irányelv biztonsági követelményeinek. Elektromágnesesen érzékenységet kiváltó biztosítson. A motorvezetékekkel tárból elkülönítve vezesse vezérlő és hálózati vezetékeket. Nagy felületen csatlakoztassa a védőföldeléshez a vezetékkáryékolást. IEVĒROT PIESARDZĪBU Valstis, kurās ir spēkā EK direktīvas, ierīču ar frekvenču vadību un to piederumu ekspluatāciju drīkst sākt tikai tad, ja ir konstatēta iekārtas atbilstība Mašīnu direktīvā 2006/42/EK ietvertajām aizsardzības prasībām. EMS atbilstoša izbūve. Vadības un tīkla kabelus izvietot atsevišķi no motora kabeļa. Vada ekrānu plaša virsmā savienot ar PE. ATSARGIAI EB direktīvų taikymo srityje dažninių būdu valdomus įrenginius ir jų priedus leidžiama pradėti naudoti tik tada, kai nustatoma, kad įrenginys atitinka Mašinų direktyvos 2006/42/EB keliamus apsaugos reikalavimus. Montažas turi atitikti EMS reikalavimus. Valdymo ir duomenų tinklo kabelius išdėstyti atokiai nuo variklio kabelio. Kabelio ekraną dideliu paviršium sujungti su žeminiu. OSTROŻNIE Na obszarze obowiązywania dyrektyw WVE urządzenia sterowane częstotliwościowo wolno wprowadzać do eksploatacji tylko wtedy, gdy zostanie stwierdzone, że maszyna spełnia wymagania ochronne dyrektywy maszynowej 2006/42/WE. Konstrukcja zgodna z dyrektywą w sprawie kompatybilności elektromagnetycznej (EMC). Przewody sterownicze i zasilania elektrycznego należy układać oddzielnie od przewodu siłki. Ekranowanie połączyć z przewodem uziemiającym na większej powierzchni. PREVIDNO Na območju veljavnosti direktiv ES je zagon frekvenčno krmiljenih naprav in njihovega pribora dovoljen le tedaj, ko je bilo ugotovljeno, da stroj ustreza varnostnim zahtevam Direktive o strojih 2006/42/ES. Montaža v skladu z EMC. Krmilne in omrežne vodnike napeljite ločeno od vodnikov motorja. Oklop vodnika na veliki površini povežite z zaščitnim vodnikom. VÝSTRAHA V krajinách, ktoré spadajú pod pôsobnosť smernice ES smú byť rádiové ovládané zariadenia a ich príslušenstvo uvedené do prevádzky len ak je zabezpečené, že stroj spĺňa ochranné ustanovenia smernice č. 2006/42/ES o strojových zariadeniach. Montáž v súlade s požiadavkami elektromagnetickej kompatibility. Ovládacie a sieťové vedenia ukladajte v priestore oddelene od vedenia motoru. Zabezpečte veľkú kontaktnú plochu medzi kábovým tienišom a PE. ВНИМАНИЕ В сферата на действие на изискванията на ЕС устройствата с честотно управление и техните допълнителни устройства могат да бъдат приведени в употреба, само ако се установи, че оборудването отговаря на изискванията за безопасност на машинно оборудване спрямо 2006/42/ЕО. Монтаж с електромагнитна съвместимост. Полагане на контролните и мрежови проводници пространствено отделно от проводника на двигателя. Осигурете по-голяма контактна площ между силовия екран и PE. PRECAUTJE În cadrul sferai de aplicare a directivei UE dispozitivele controlate prin frecvență și accesoriile acestora au voie să fie puse în funcțiune doar dacă se stabilește că aparatul îndeplinește cerințele Directivei 2006/42/CE privind mașinile. Montajul trebuie să fie compatibil EMC. Pozitionați cablurile de control și de rețea la distanță de cablul motorului. Asigurați o suprafață de contact mare între izolația cablului și PE. OPREZ U području valjanosti Direktiva EZ frekvencijski upravljani uređaji i njihov pribor smiju se puštati u rad samo ako se utvrdi da stroj ispunjava zahtjeve za zaštitom iz Direktiva o strojevima 2006/42/EZ. Konstrukcija u skladu s EMC-om. Upravljački i mrežni vodovi prostorno položeni odvojeno od voda motora. Zaslon kabela povezan PE-om na velikoj površini. DİKKAT AB Direktifi dahilinde, frekans kontrollü cihazlar ve aksesuarları, yalnızca makinenin 2006/42/EC Makina Emniyet Direktifi koruma şartlarını karşıladığı belirlendiğinde çalıştırılmalıdır. EMC uyumlu kurulum sağlayın. Kontrol ve iletim kablolarını uzamsal olarak motor kablosundan ayrı koyun. Kablo ekranı ile PE arasında geniş bir temas alanı bağlantısı olmasını sağlayın. ОБЕРЕЖНО! На території, на яку поширюється дія Директиви ЕС, пристрої з частотним регулюванням та їхні приналежності можуть вводитися в експлуатацію лише в разі визнання їх такими, що відповідають вимогам до захисту, викладеним у Директиві про машинне обладнання 2006/42/EC. Переконайтеся в тому, що встановлена система відповідає вимогам до EMC. Кабелі керування та зв'язку мають бути просторово відокремлені від кабелю електродвигуна. Зabezпечте достатню контактну поверхню між екраном кабелю та PE. احذر! في المنطقة التي تخضع لتوجيه الاتحاد الأوروبي، يجب ألا يتم تشغيل الأجهزة وملحقاتها التي يتم التحكم فيها بواسطة التردد إلا بعد التأكد من أنها تستوفي متطلبات حماية توجيه الماكينات 2006/42/EC. ع كابلان. أ. التوافق الكهرومغناطيسي احذر على أن يكون التركيب مطابقاً مع كابل المحرك. تأكد من وجود التحكم والاتصال بشكل منفصل مكاني وPE منطقة لامس كبيرة بين شاشة كبل ОПРЕЗ На території ЕУ директиве, уређаји са фреквентном контролом и њихова додатна опрема морају се пустити у рад само када је утврђено да машина испуњава захтеве заштите Директиве о машинама 2006/42/ЕЗ. Обезбедите инсталацију у складу са EMC стандардима. Положите контролне и комуникационе каблове просторно одвојено од кабла мотора. Обезбедите велику контактну површину између заштите кабла и PE.
---	--

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

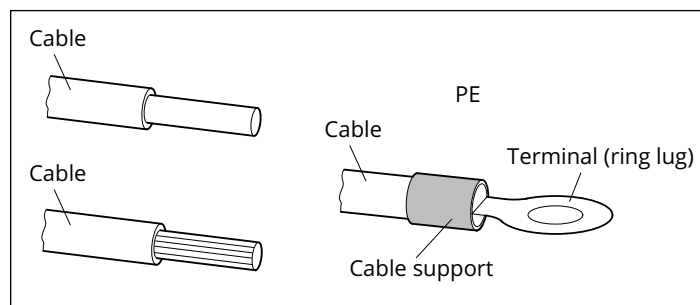
Wire connectors



(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 variable 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.

Table 10. 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		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		800 9881203



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 landfills and minimize any potential negative impact on human health and environment.

Eaton.com/recycling

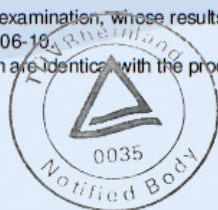
EC Type-Examination Certificate

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

www.fs-products.com
www.tuv.com
TÜVRheinland®
 Precisely Right.

TÜV Rheinland Industrie Service GmbH, Am Grauen Stein, 51105 Köln / Germany
Tel.: +49 221 808-2434, Fax: +49 221 808-1354, E-Mail: industrie-service@de.tuv.com

Doc. No.: EC-DoC-VFD-DM1-Pro-20250630

EC 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):

2014/53/EU	Radio Emission Directive
2006/42/EC	Machinery Directive
2011/65/EU	RoHS Directive
2009/125/EC	ERP Directive

based on compliance with European standard(s):

EN 61800-5-1:2007+A1:2017+A11:2021
EN 61800-3:2004+A1:2012
EN IEC 61800-3:2018
EN IEC 61800-3:2023
EN IEC 63000:2018
EN 61800-9-2:2017
EN 62479:2010
ETSI EN 300 328 V2.2.2:2019
ETSI EN 301 489-1 V1.9.2:2011
ETSI EN 301 489-1 V2.2.3:2019
ETSI EN 301 489-17 V3.2.4:2020



Powering Business Worldwide

Doc. No.: EC-DoC-VFD-DM1-Pro-20250530

EC Declaration of Conformity

EN 61800-5-2:2007
EN 61800-5-2:2017
EN 61508-1:2010
EN 61508-2:2010
EN 61508-3:2010
EN ISO 13849-1:2023
EN IEC 62061:2021+A1:2024

Conformity with the **Machinery Directive 2006/42/EC** has been certified by:

Notified Body:
TÜV Rheinland Industrie Service GmbH
Am Grauen Stein
51105 Köln / Germany
Notified Body No.: 0035

Number of the EC Type-Examination Certificate: 01/205/5753.03/25
The EC-Type examination only applies to the Machinery Directive: 2006/42/EC.

Authorized Representative:
Eaton Industries GmbH, Industrial Controls & Protection Division, Hein-Moeller-Str. 7-11,
53115 Bonn, Germany

Person authorized to compile the technical file:
Eaton Industries GmbH, Industrial Controls & Protection Division, Hein-Moeller-Str. 7-11,
53115 Bonn, Germany

The declared product is consistent with the examined production sample.
The production date is on the last line of the product's rating label.
The SN on the rating label represents the unique code of the product.



Powering Business Worldwide

Issued: 2025-05-30



Simon Chen
VFD Engineering Manager
Shenzhen, China

Disclaimer of warranties and limitation of liability

The information, recommendations, descriptions and safety notations in this document are based on Eaton Corporation's ("Eaton") experience and judgment and may not cover all contingencies. If further information is required, an Eaton sales office should be consulted. Sale of the product shown in this literature is subject to the terms and conditions outlined in appropriate Eaton selling policies or other contractual agreement between Eaton and the purchaser.

THERE ARE NO UNDERSTANDINGS, AGREEMENTS, WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY, OTHER THAN THOSE SPECIFICALLY SET OUT IN ANY EXISTING CONTRACT BETWEEN THE PARTIES. ANY SUCH CONTRACT STATES THE ENTIRE OBLIGATION OF EATON. THE CONTENTS OF THIS DOCUMENT SHALL NOT BECOME PART OF OR MODIFY ANY CONTRACT BETWEEN THE PARTIES.

In no event will Eaton be responsible to the purchaser or user in contract, in tort (including negligence), strict liability or otherwise for any special, indirect, incidental or consequential damage or loss whatsoever, including but not limited to damage or loss of use of equipment, plant or power system, cost of capital, loss of power, additional expenses in the use of existing power facilities, or claims against the purchaser or user by its customers resulting from the use of the information, recommendations and descriptions contained herein. The information contained in this manual is subject to change without notice.

Contact Addresses:

Eaton Industries GmbH,
Hein-Moeller-Straße 7-11,
53115 Bonn, Germany

Eaton Corporation
W126N7250 Flint Drive
Menomonee Falls
WI 53051 USA

Eaton Electric Ltd.
P.O. Box 554
Abbey Park Southampton Road
Titchfield, PO14 4QA
United Kingdom

Eaton

1000 Eaton Boulevard
Cleveland, OH 44122
United States
Eaton.com

©2025 Eaton
All Rights Reserved
Printed in USA
Publication No. PUB53675 / Z30423
September 2025