Powering Business Worldwide

06/12 IL03902003Z
(AWA8250-2541)

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
Instrucțiuni de montaj
Upute za montažu

(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 e 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 ηλεκτροτεχνίτες.

(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 smějí provádět pouze osoby s elektrotechnickým vzděláním.

(et) Eluohtlik! 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 elektroodborníci a osoby s elektrotechnickým vzdelaním.

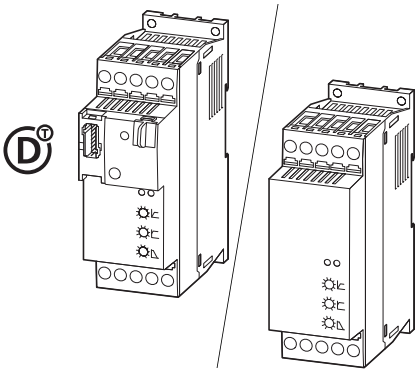
(bg) Опасност за живота от електрически ток!
Операциите, описани в следващите раздели, могат да се извършват само от специалисти-електротехници и инструктиран електротехнически персонал.

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

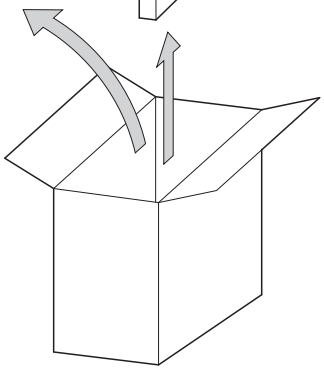
(hr) Opasnost po život uslijed električne struje!
Radove opisane u nastavku smiju obavljati samo stručni električari i osobe koje su prošle elektrotehničku obuku.

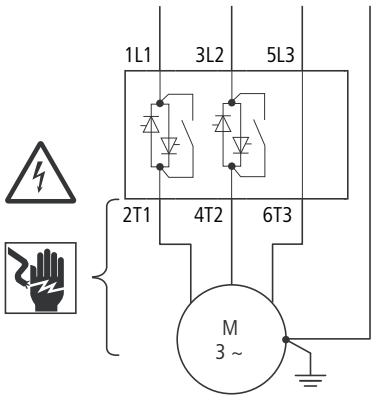
DS7-34…SX004N0-…
DS7-34…SX007N0-…
DS7-34…SX009N0-…
DS7-34…SX012N0-…

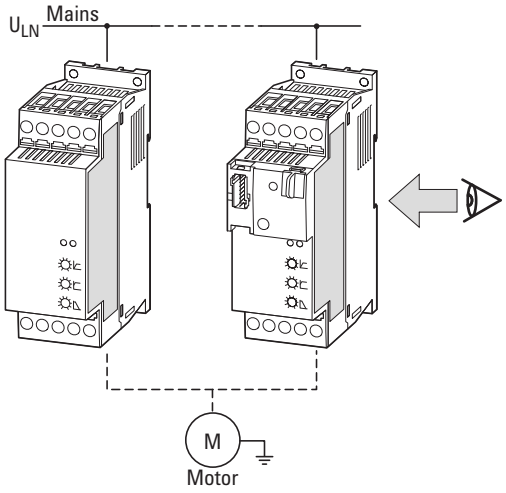
MN03901001… (AWB8250-1634…)
www.eaton.eu/documentation











DS7- 34 x SX yyy N0- z

N = No Option
D = SmartWire-DT

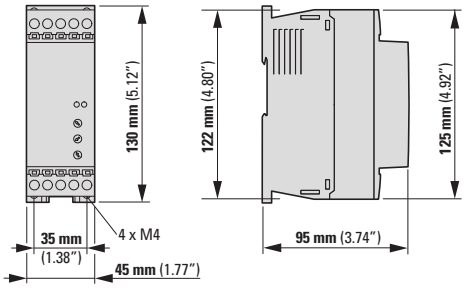
I_e

U_s, U_c:
0 = 24 V AC/DC
2 = 120/230 V AC
D = 24 V DC

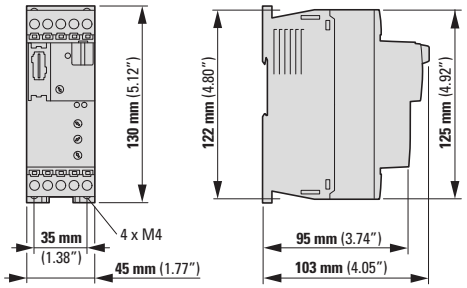
$U_e \leqq U_{LN}$
200 - 480 V AC 3ph 50/60 Hz

I_e	UL Rating	IEC Rating Index 1	IEC Rating Index 2
004	3.4 FLA, 480 V AC, 50/60 Hz	4 A: AC-53a	3-5: 75-10
007	4.8 FLA, 480 V AC, 50/60 Hz	7 A: AC-53a	3-5: 75-10
009	7.6 FLA, 480 V AC, 50/60 Hz	9 A: AC-53a	3-5: 75-10
012	14 FLA, 480 V AC, 50/60 Hz	12 A: AC-53a	3-5: 75-10

DS7-340…, DS7-342…



DS7-34D…-D



kg

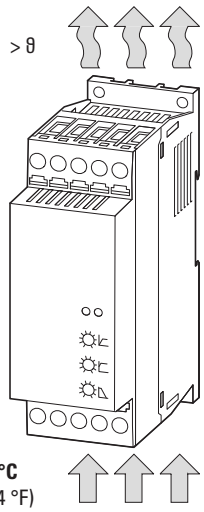
DS7-340…	0.3
DS7-342…	0.3
DS7-34D…	0.33

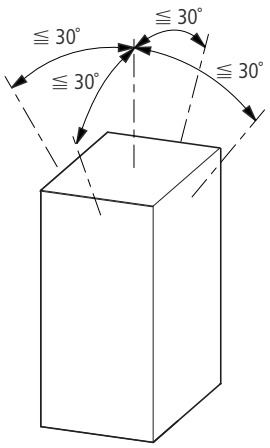
1 inch = 25.4 mm
1 mm = 0.0394 inch
1 inch = 1"

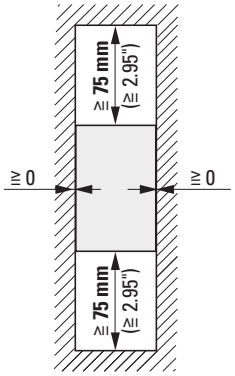
1 lbs = 0.454 kg
1 kg = 2.2 lbs

06/12 IL039020032

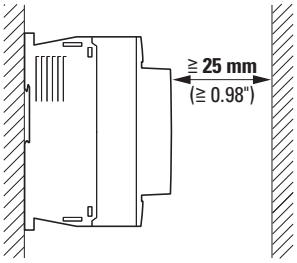
Emergency On Call Service: Local representative (www.eaton.eu/aftersales) or +49 (0) 180 5 223822 (de, en)



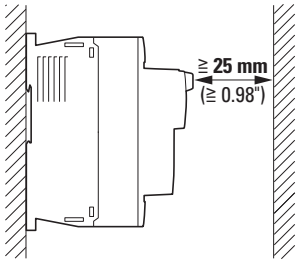


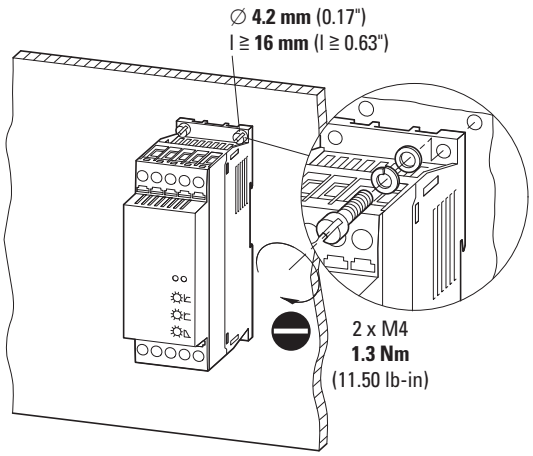


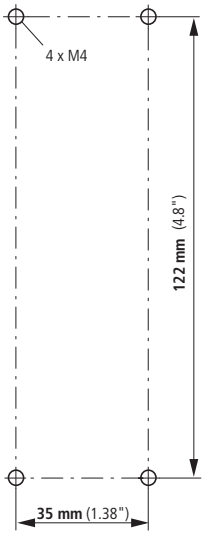
DS7-340…, DS7-342…

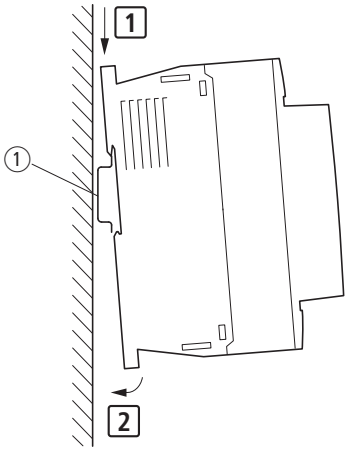


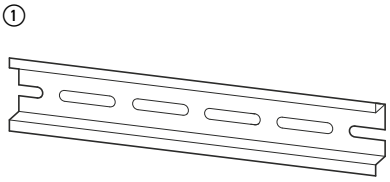
DS7-34D…



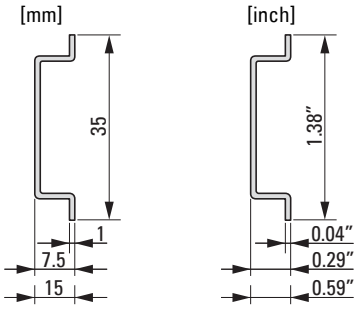






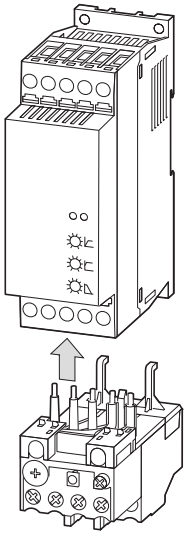


IEC/EN 60715



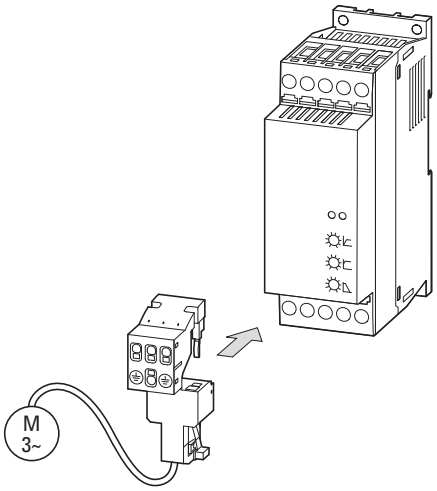
06/12 IL03902003Z

DS7-34… + ZB12…



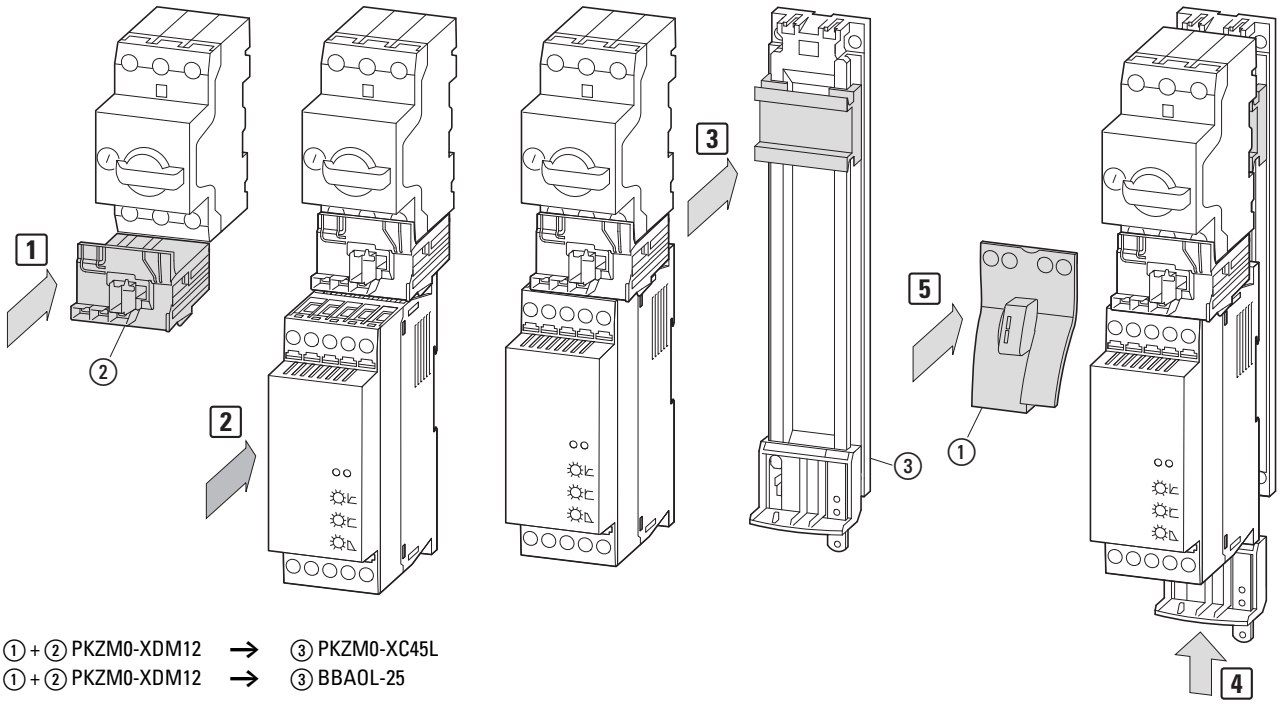
ZB12… → IL03407015Z (AWA2300-2114)

DS7-34… + DILM-XMCP/T



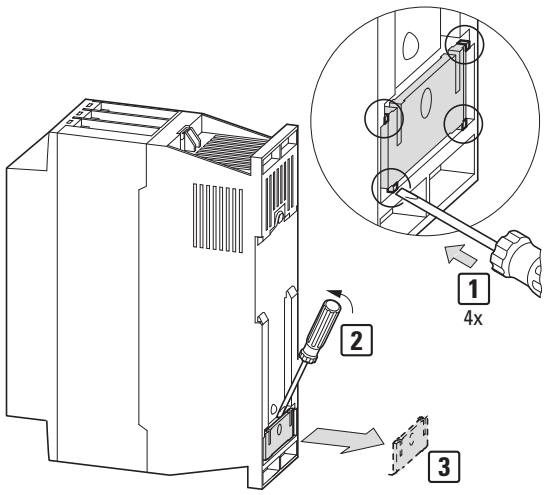
DILM-XMCP/T → IL03407054Z (AWA2100-2690)

DS7-34… + PKZ…/PKE…

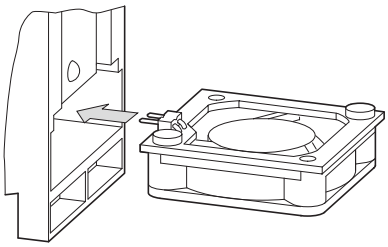


① + ② PKZM0-XDM12 → ③ PKZM0-XC45L
① + ② PKZM0-XDM12 → ③ BBAOL-25

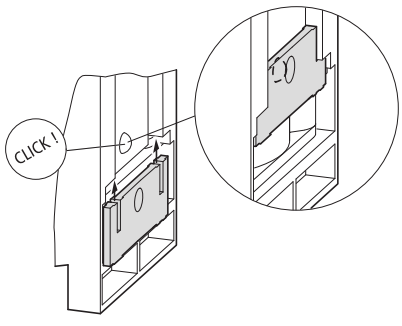
1 DS7-34… + DS7-FAN-032



2



3



06/12 IL039020033Z

(en) *ATTENTION*

Within the scope of the EU Directives, the soft starters of series DS7 and their accessories may be commissioned only provided it is established that the machine fulfils the protective requirements of Machine Directive 89/392/EWG.

(de) *ACHTUNG*

Im Geltungsbereich der EG-Richtlinien dürfen die Softstarter der Reihe DS7 und deren Zubehör nur dann in Betrieb genommen werden, wenn festgestellt wird, dass die Maschine die Schutzanforderungen der Maschinenrichtlinie 89/392/EWG erfüllt.

(fr) *ATTENTION*

En application des directives européennes, les démarreurs progressifs de la gamme DS7 et leurs accessoires ne doivent être mis en service que s'il a été vérifié que la machine répond bien aux exigences de la directive machines 89/392/EWG.

(es) *CUIDADO*

En el campo de aplicación de la normativa CE, los arrancadores suaves de la serie DS7 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 89/392/CE.

(it) *AVVISO*

Nel campo di validità delle direttive CEE i softstarter della serie DS7 e i loro accessori possono essere messi in esercizio solamente se è verificato che la macchina soddisfa i requisiti di sicurezza delle direttive macchine 89/392/CEE.

(zh) 注意

根据欧盟设备一致性规范，安装 DS7 系列软启动器及其配件时，
应确保设备满足机器规范 89/392/EWG 中关于设备保护的要求。

(ru) *ВНИМАНИЕ*

В сфере действия директив ЕС устройства плавного пуска серии DS7 и их принадлежности разрешается эксплуатировать только в том случае, если установлено, что машина соответствует требованиям по защите Директивы по машинному оборудованию 89/392/EWG.

(nl) *OPGELET*

Binnen het geldigheidsgebied van de EG-richtlijn mogen de softstarters uit de serie DS7 en de toebehoren daarvan alleen in bedrijf worden genomen, wanneer wordt vastgesteld, dat de machine aan de veiligheidseisen van de machinerichtlijn 89/392/EWG voldoet.

(da) *VIGTIGT*

I EF-direktivernes anvendelsesområde må softstartere i DS7-serien og deres tilbehør kun tages i drift, når det fastslås, at maskinen opfylder beskyttelseskravene i henhold til Maskindirektivet 89/392/EØF.

(el) *ΕΠΑΓΡΥΠΝΗΣΗ*

Στο πεδίο εφαρμογής των οδηγιών της ΕΚ, οι ομαλοί εκκινητές της σειράς DS7 και τα παρελκόμενά τους επιτρέπεται να τίθενται σε λειτουργία μόνο εφόσον διαπιστωθεί ότι το μηχάνημα πληροί τις απαιτήσεις προστασίας της οδηγίας της ΕΚ 89/392/ΕΟΚ για τα μηχανήματα.

(pt) *ADVERTÊNCIA*

No âmbito das directivas da CE, os soft-starters da linha DS7 e os respectivos acessórios só podem ser postos em funcionamento quando ficar assegurado que a máquina cumpre com as exigências de segurança da directiva de máquinas 89/392/CEE.

(sv) *OBSERVERA*

Inom omfattningen av EG -riktlinjerna får mjukstartare i serie DS7 och dess tillbehör endast tas i drift när det, fastställts att maskinen uppfyller kraven i maskindirektivet 89/392/EG.

(fi) *ILMOITUS*

EY-direktiivien pätemisalueella DS7-sarjan ja niiden varusteiden pehmeäkäynnistimen saa ottaa vain silloin käyttöön, kun todetaan, että kone täyttää konedirektiivin 89/392/ETY suojausvaatimukset.

(cs) *UPOZORNRNIE*

V rozsahu platnosti směrnic ES smějí být startéry k pozvolnému rozběhu řady DS7 a jejich příslušenství uvedeny do provozu pouze tehdy, bude-li zjištěno, že stroj splňuje požadavky ochrany směrnice o strojích 89/392/EHS.

(et) *TÄHELEPANU*

EÜ-direktiivi reguleerimisalas võib sujuvkäiviteid seeria DS7 ja nende tarvikuid ainult siis kasutusele võtta, kui tehakse kindlaks, et masin vastab masinadirektiivi 89/392/EWG kaitse osas kehtivatele nõuetele.

(hu) VIGYÁZAT

Az EU irányelvek érvényességi körében a DS7-es sorozatú lágyindítók és azok tartozékai csak akkor helyezhetők üzembe, ha megállapítást nyert, hogy a berendezés a gépek biztonságáról szóló 89/392/EGK irányelv biztonsági követelményeinek megfelel.

(lv) *UZMANĪBU*

Nozarēs, kurās tiek piemērotas EK direktīvas, sērijas DS7 palēninātās darbības starterus un to piederumus atļauts darbināt tikai tad, ja tiek konstatēta mašīnas atbilstība Mašīnu direktīvā 89/392/EEK noteiktajām aizsardzības prasībām.

(lt) *DĖMESIO*

EB direktyvų taikymo srityje DS7 serijos švelnaus paleidimo įrenginius ir jų priedus leidžiama pradėti naudoti tik tada, kai nustatoma, kad įrenginys atitinka Mašinų direktyvos 89/392/EEB keliamus apsaugos reikalavimus.

(pl) *UWAGA*

W obszarze obowiązywania dyrektyw WE softstartery typoszeregu DS7 i ich osprzęt wolno uruchamiać tylko wtedy, gdy zostanie stwierdzone, że maszyna spełnia wymagania w zakresie ochrony zgodnie z dyrektywą maszynową 89/392/EWG.

(sl) *POZOR*

V območju veljavnosti EU direktiv se smejo mehki zaganjalniki serije DS7 in njihov pribor izročiti v obratovanje le, ko je ugotovljeno, da stroj izpolnjuje zahteve glede zaščite, ki jih določa Direktiva o strojih 89/392/ESG.

(sk) *UPOZORNRNIE*

V oblasti platnosti smerníc ES smú byť softštartéry z rady DS7 a ich príslušenstvo uvedené do prevádzky len vtedy ak je zaistené, že zariadenie spĺňa požiadavky na ochranu smernice o bezpečnosti strojov č. 89/392/EHS.

(bg) *ПРЕДУПРЕЖДЕНИЕ*

В обхвата на директивите на ЕО софтстартери от линията DS7 и техните принадлежности могат да бъдат пускани в експлоатация само тогава, когато бъде установено, че машината изпълнява изискванията за безопасност на Директива за машините 89/392/EWG.

(ro) *ATENTJE*

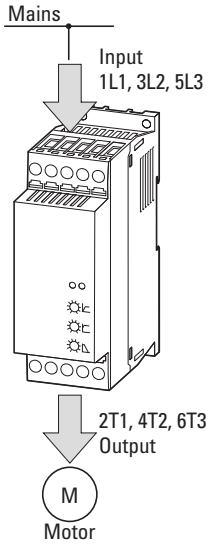
În domeniul de valabilitate a directivelor CE, soft starterele seriei DS7 şi accesoriile acestora pot fi puse în funcţiune numai dacă s-a stabilit că maşina îndeplineşte cerinţele de protecţie ale directivei pentru maşini 89/392/CEE.

(hr) *POZOR*

U području valjanosti Direktiva EZ soft start uređaji serije DS7 i njihov pribor smiju se puštati u rad samo ako se utvrdi da stroj ispunjava zahtjeve za zaštitom iz Direktive o strojevima 89/392/EEZ.

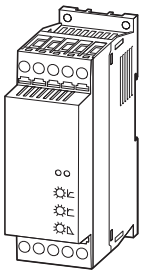
Type	**DS7-34xSX…**
Input	U_e 230 - 480 V ±10 % AC 50/60 Hz
DS7-340SX…N0-z	U_c ,U_s 24 V +10 % -15 % AC/DC
DS7-34DSX…N0-z	U_c ,U_s 24 V +10 % -15 % DC
DS7-342SX…N0-z	U_c ,U_s 110 - 230 V +10 % -15 % AC 50/60 Hz
Output	0 - U_e V AC 50/60 Hz
Product standard	IEC/EN 60947-4-2
Load-Cycle	AC53a: 3 - 5: 75 - 10

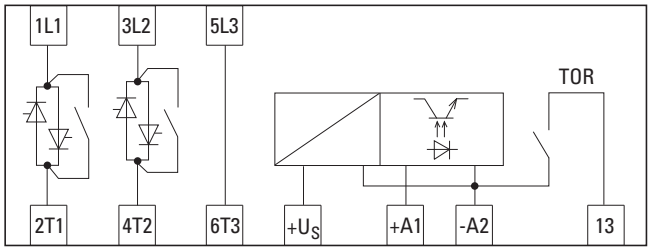
Attention!
UL/CSA = Cu only, Ampacity per 75 °C Table.



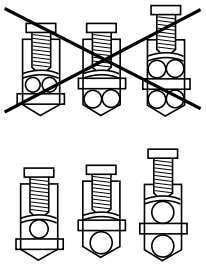
06/12 IL03902003Z

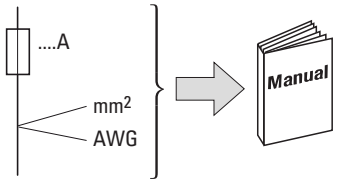
L1 → 1/L1
L2 → 3/L2
L3 → 5/L3



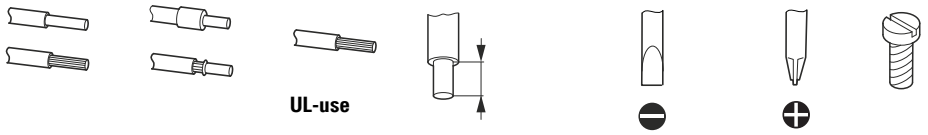


2/T1 → U
4/T2 → V
6/T3 → W





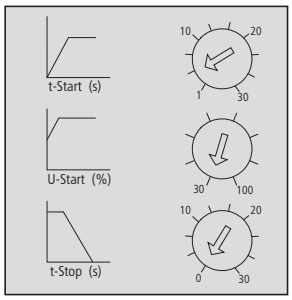
1L1, 3L2, 5L3, 2T1, 4T2, 6T3, +A1, 13, +U_s , -A2



mm²	mm²	UL-use AWG	mm	inch			Nm	lb-in
1 x 0.75 - 4	1 x 0.75 - 2.5	18 - 10	10	0.39	1 x 6	PZ2	1.2	10.62
2 x 0.75 - 3.5	2 x 0.75 - 2.5	2 x 21 - 20	10	0.39	1 x 6	PZ2	1.2	10.62



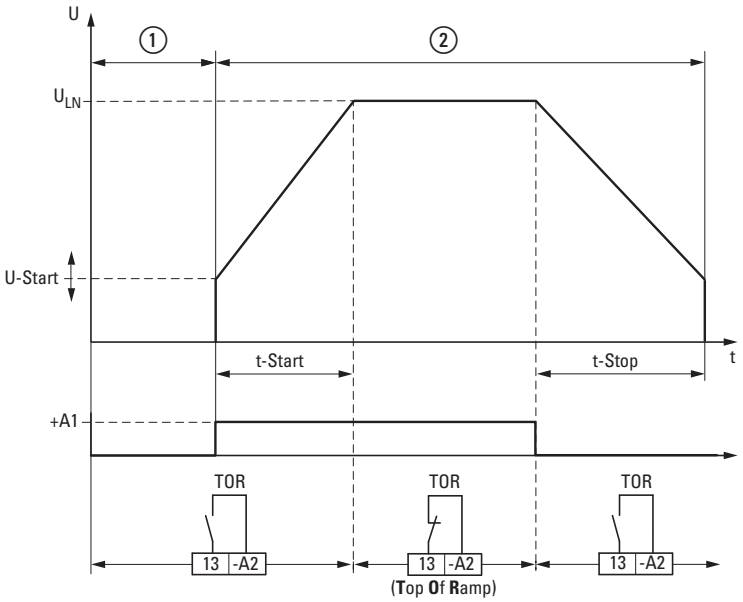
	Uc, Us +A	
DS7-340…	24 V AC/DC	1 A, 24 V AC/DC, 50/60 Hz
DS7-342…	230 V AC	1 A, 230 V AC 11, 50/60 Hz
DS7-34D…	24 V DC	1 A, 24 V DC



5 s

30 % U_{LN}

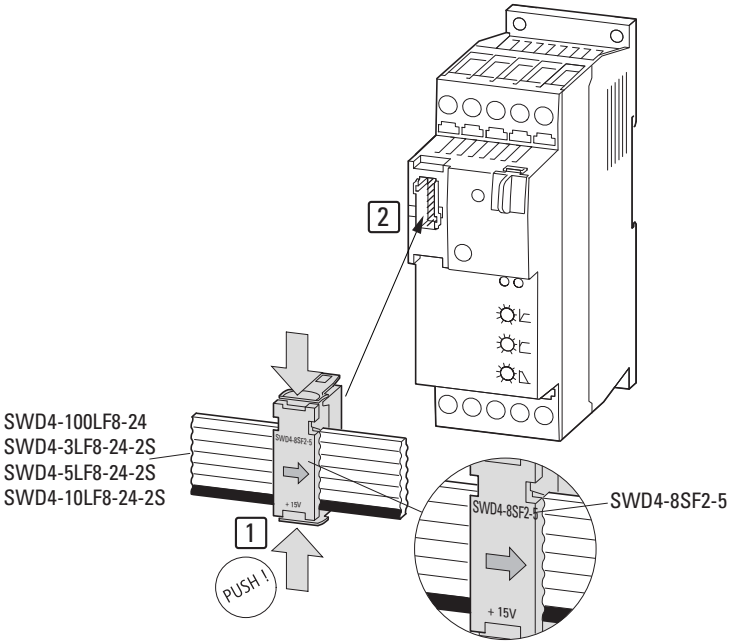
0 s = OFF



I_c = 20 mA
① I_s = 30 mA + [I_{FAN}]
② I_s = 100 mA + [I_{FAN}]
I_{Peak} ~ 250 mA, 50 ms
I_{FAN} = 50 mA

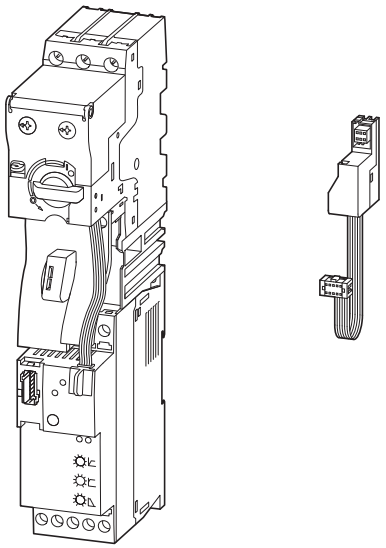
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DS7-34D…-D + SmartWire-DT®

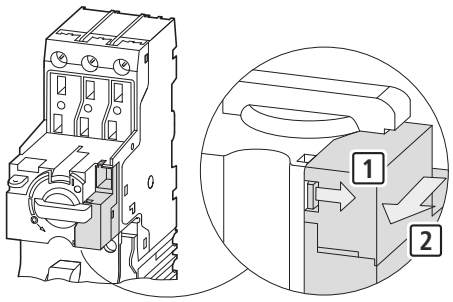


SWD → IL **IL04716001Z** (AWA1160-2512)

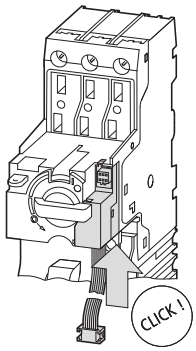
DS7-… + PKE… + PKE-SWD-32



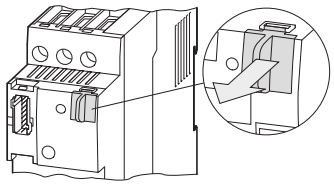
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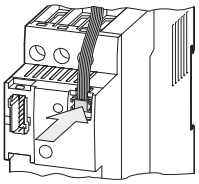
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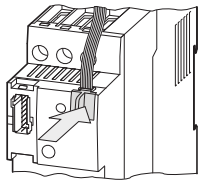
3



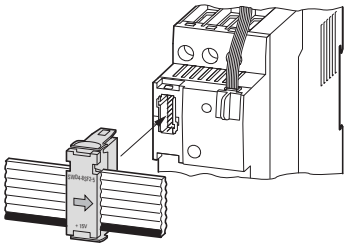
4



5



6



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Wiring Warnings for Electrical Practices and Wire Sizes

The Cautions, Warnings, and instructions in this section summarize the procedures necessary to ensure a soft starter installation complies with Underwriters Laboratories® guidelines.

NOTICE

UL/CSA = Cu only, Ampacity per 75 °C Table.

NOTICE

Open Type Equipment.

Terminal Tightening Torque and Wire Size

The wire size range and tightening torque for field wiring terminals are presented in the table below.

Motor Overload Protection

NOTICE

Each motor must be protected against thermal overload.

Soft starter DS7 requires against thermal overload an combination with an overload relay (PKZ, PKE) or a bimetallic relay (ZB).

If two or more motors are connected behind the soft starter, each engine must be separately protected against thermal overload.

Model Types	Wire size								Torque			
	Power				Control				Power		Control	
	1x		2x		1x		2x					
	AWG	mm^2	AWG	mm^2	AWG	mm^2	AWG	mm^2	Nm	lb-in	Nm	lb-in
DS7-340SX004N0-N DS7-340SX007N0-N DS7-340SX009N0-N DS7-340SX012N0-N	18 - 10	0.75 - 4	18 - 10	0.75 - 3.5	18 - 10	0.75 - 4	18 - 10	0.75 - 3.5	1.2	10.62	1.2	10.62
DS7-342SX004N0-N DS7-342SX007N0-N DS7-342SX009N0-N DS7-342SX012N0-N	18 - 10	0.75 - 4	18 - 10	0.75 - 3.5	18 - 10	0.75 - 4	18 - 10	0.75 - 3.5	1.2	10.62	1.2	10.62

→ AWG = American Wire Gauge. Smaller numbers represent increasing wire thickness.
MCM/kcmil = 1,000 circular mils, a measure of wire cross-sectional area
mm^2 = square millimeters, a measure of wire cross-sectional area

Circuit Breaker and Fuse Sizes

The soft starter connections to input power must include UL Listed inverse time circuit breakers with 600 V rating, or UL Listed fuses as shown in the table below.

NOTICE

Suitable for use on a circuit capable of delivering not more than 5,000 rms symmetrical ampers, 480 V maximum.

Model Types	SC Ratings	Branch Circuit Protection	Max. HP [V AC]			Max. kW [V AC]	
			200	240	480	230	400
DS7-340SX004N0-N DS7-342SX004N0-N	5 KA, 480 V AC	50 A RK5 fuse or breaker	0.5	0.75	2	0.75	1.5
DS7-340SX007N0-N DS7-342SX007N0-N	5 KA, 480 V AC	50 A RK5 fuse or breaker	1	2	3	1.5	3
DS7-340SX009N0-N DS7-342SX009N0-N	5 KA, 480 V AC	50 A RK5 fuse or breaker	1.5	2	5	2.2	4
DS7-340SX012N0-N DS7-342SX012N0-N	5 KA, 480 V AC	50 A RK5 fuse or breaker	3	3	10	3	5.5

06/12 IL039020032

Emergency On Call Service: Local representative (www.eaton.eu/aftersales) or +49 (0) 180 5 223822 (de, en)

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