

Technical Data for Designers

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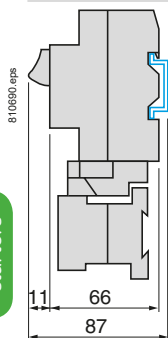
Motor starters - open version

Combination automatic motor starters

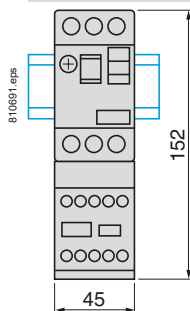
Open
pre-cabled
motor
starters

GV2 ME●●K●●

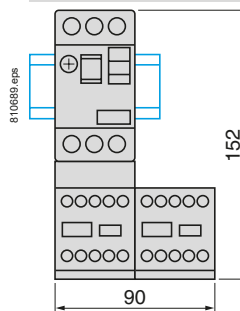
On mounting rail AM1 DE200



GV2 ME●●K1●●

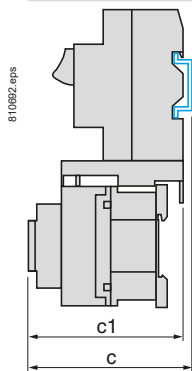


GV2 ME●●K2●●

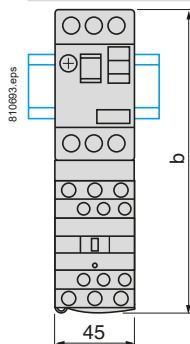


GV2 DM●●●●●

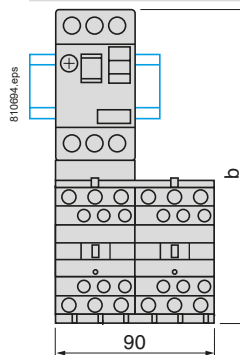
On mounting rail AM1 DE200



GV2 DM1●●●●



GV2 DM2●●●●

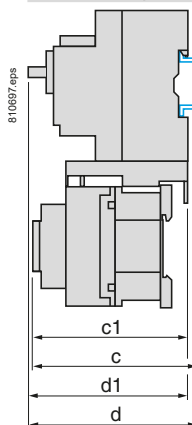


GV2DM●●●●● contactor with AC or DC coil
on mounting rail AM1DE200

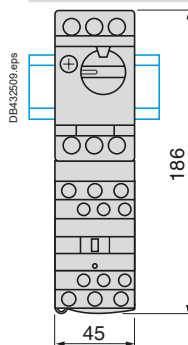
GV2	DM●02●● to DM●20●●	DM●21●● to DM●32●●
b	177	187
c	106	113
c1	96	103

GV2 DP●●●●●

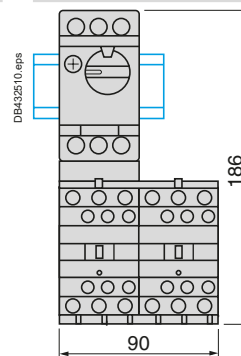
On mounting rail AM1 DE200



GV2 DP1●●●●



GV2 DP2●●●●



GV2DP●●●●● contactor with AC or DC coil
on mounting rail

GV2	DP●02●● to DP●08●●	DP●10●● to DP●32●●
b	178	188
c	111	118
c1	101	108
d	107	107
d1	97	97

References:
pages A2/2 to A2/7

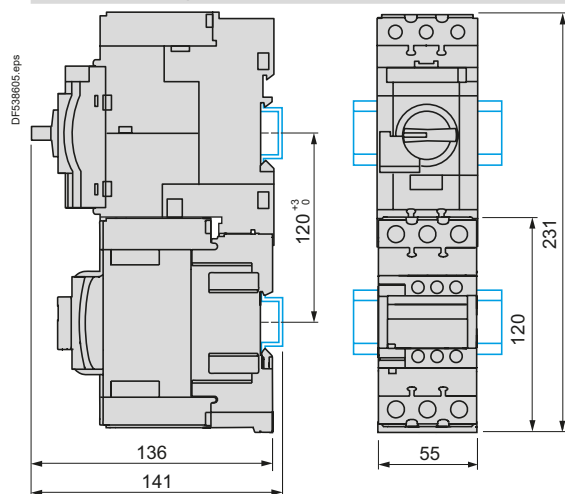
Schemes:
pages A2/22 and A2/23

Motor starters - open version

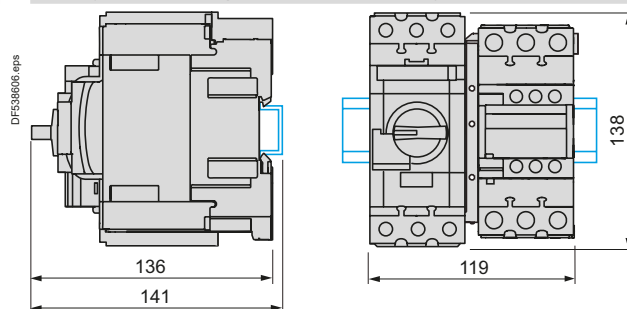
Combination automatic motor starters

GV3 P●●1 + LC1 D40A...D65A (for customer assembly)

Vertical mounting ⁽¹⁾

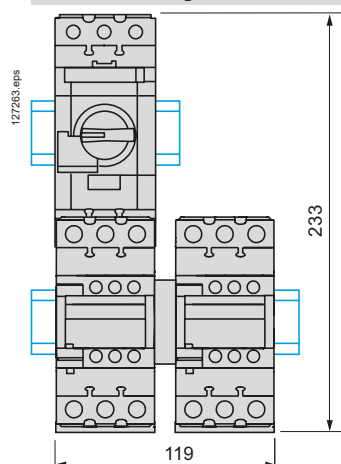


Side by side mounting with S-shape busbar system GV3 S ⁽²⁾

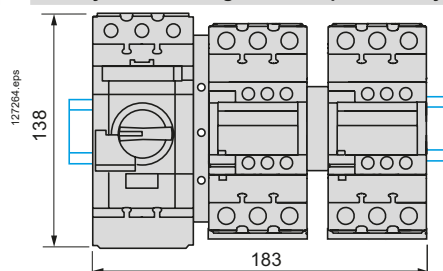


GV3 P●●1 + LC2 D40A...D65A (for customer assembly)

Vertical mounting ⁽¹⁾



Side by side mounting with S-shape busbar system GV3 S ⁽²⁾



⁽¹⁾ For several side-by-side motor starters, the maximum current allowed is equal to the nominal current under 400 V.

Example: 55 A for a 30 kW motor under 400 V, for a GV3 P65 circuit breaker and a LC1 D65A contactor association.

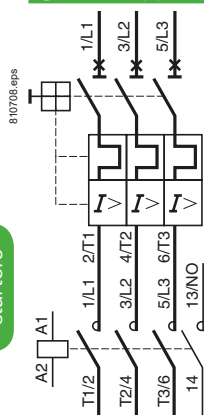
⁽²⁾ The maximum current allowed is equal to 90 % of maximum current. Example: 45 A for a LC1 D50A contactor.

Motor starters - open version

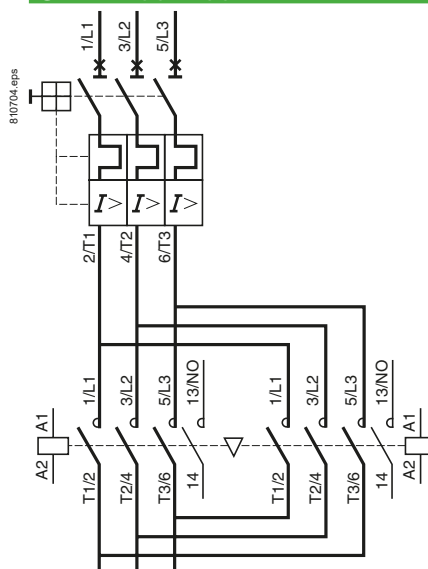
Combination automatic motor starters

Open
pre-cabled
motor
starters

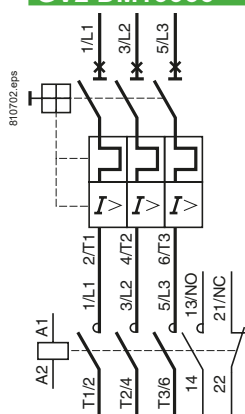
GV2 ME●●K1●●



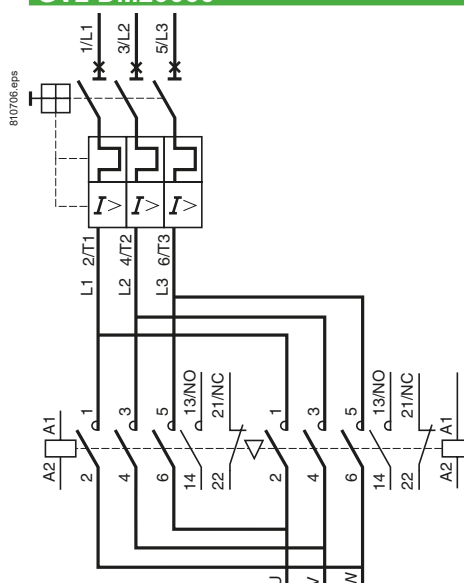
GV2 ME●●K2●●



GV2 DM1●●●●



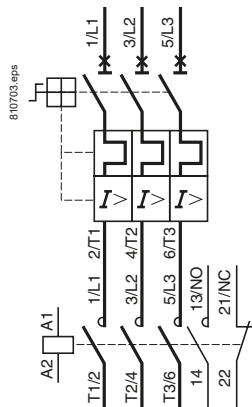
GV2 DM2●●●●



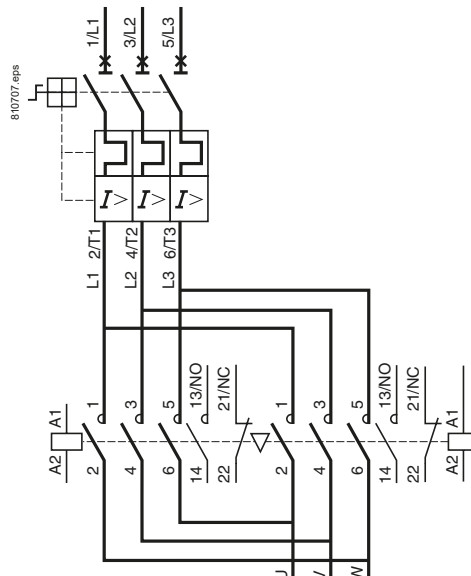
Motor starters - open version

Combination automatic motor starters

GV2 DP1●●●●



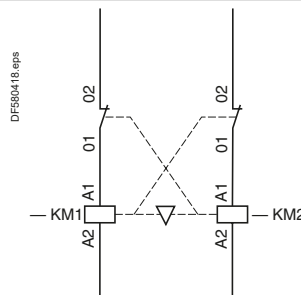
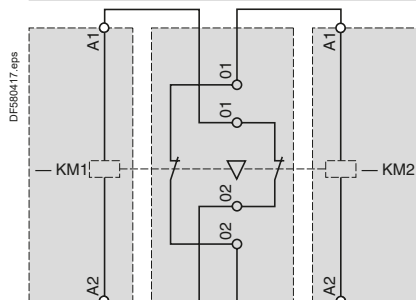
GV2 DP2●●●●



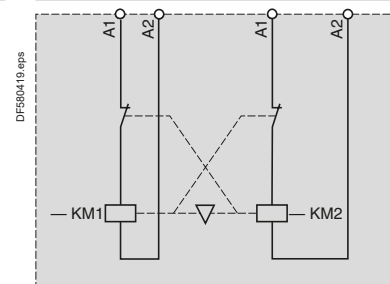
Open
pre-cabled
motor
starters

Mechanical interlock with integral electrical contacts

Control circuit ~



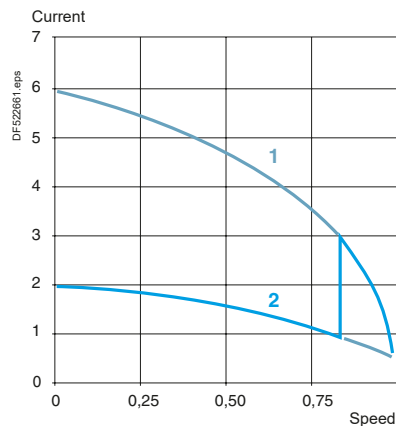
Control circuit ⋯



Motor starters - open version

Start-delta starters for motor control

Star-delta starting

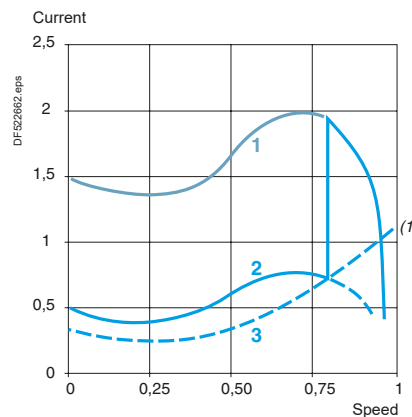


This method of starting is applicable to motors on which all 6 stator terminals are accessible and whose delta connection voltage corresponds to the mains voltage.

Star-delta starting should be used for motors starting on no-load or having a low load torque and gradual build-up:

- the starting torque in star connection is reduced to one third of the direct starting torque, i.e. about 50 % of the rated torque.
- the starting current in star connection is about 1.8 to 2.6 times the rated current.

- 1 Starting in direct delta connection
- 2 Starting in star connection



The transition from star to delta connection must occur when the machine has run up to speed. A too rapid build-up in load torque would cause the stabilised run-up speed to be too low and would therefore eliminate any advantage in this method of starting: this is the case with certain machines whose load torque depends on the machine speed (a characteristic of centrifugal machines, for example).

All star-delta starters are supplied with a special LAD S2 or LA2 KT2● time delay relay which imposes a delay on the delta contactor during the transition period in order to allow the star contactor sufficient breaking time.

For ratings D115 and D150, this function is performed by a time delay auxiliary contact block LAD T2 and a control relay.

(1) Motor manufacturers generally specify machine load torques.

Example: maximum resistive torque on completion of star-delta start (expressed as a proportion of the rated torque).

Dimensions

Star-delta starters

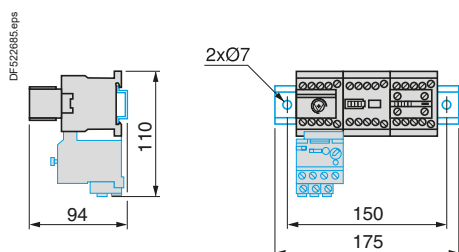
Plate mounted, pre-assembled

LC3 K

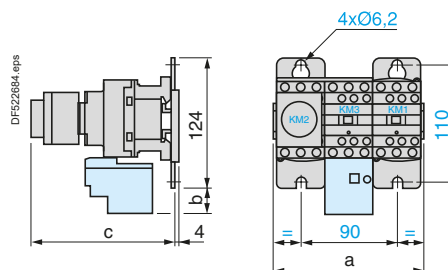
Pre-assembled:

LC3 D09A...D32A

For customer assembly: 3 x LC1 D with components D09 to D32



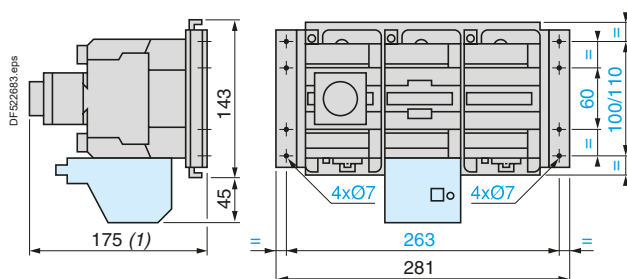
On starters LC3 D09A to D18A, a connection block is mounted on the upper part of contactor KM2, increasing the overall height of the product by 6.5 mm.



LC3	D09A	D12A	D18A	D32A
a	143	143	144	165
b	26.5	26.5	26.5	32.5
c	with LAD S	139	139	145
	with LAD S and sealing cover	143	143	149

Pre-assembled: LC3 D80

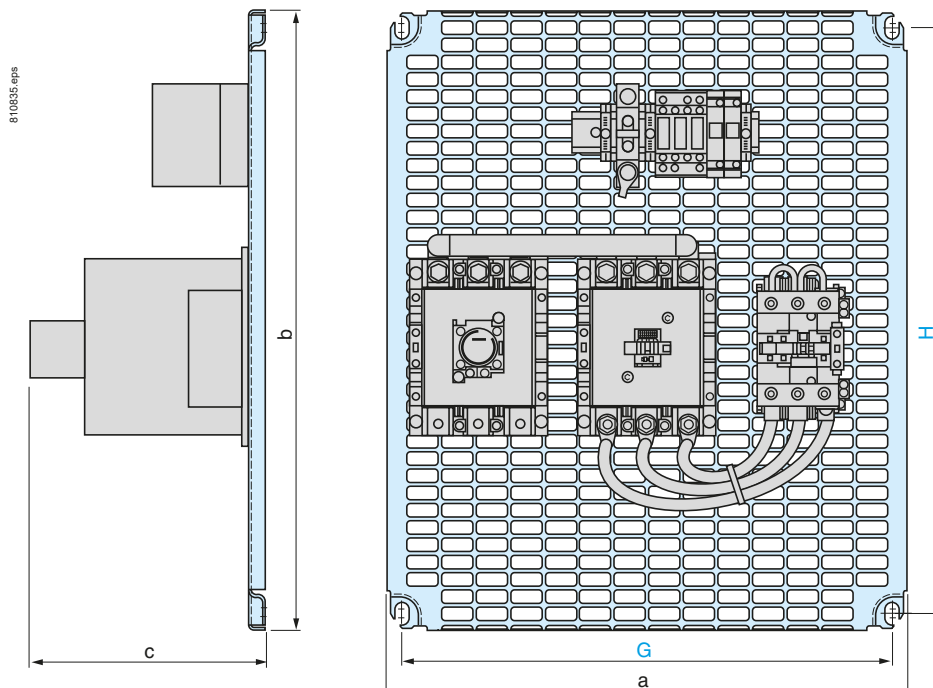
For customer assembly: 3 x LC1 D with components D80



(1) +4 mm with sealing cover

Pre-assembled: LC3 D115, D150

For customer assembly: 3 x LC1 D with components D115 or D150



		a	b	c	G	H
LC3 D115 or 3 x LC1 D with components	D115	450	555	205	425	525
LC3 D150 or 3 x LC1 D with components	D150	450	555	205	425	525

References:
pages A2/8 to A2/13

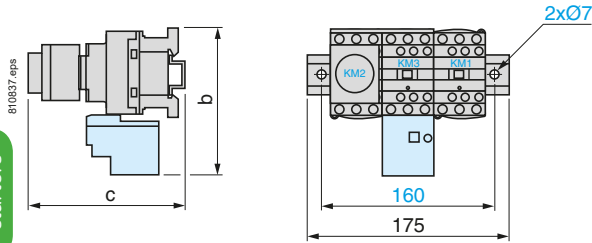
Schemes:
page A2/26

Dimensions

Star-delta starters

On mounting rail AM1 DP, pre-assembled

LC3 D090A à D320A



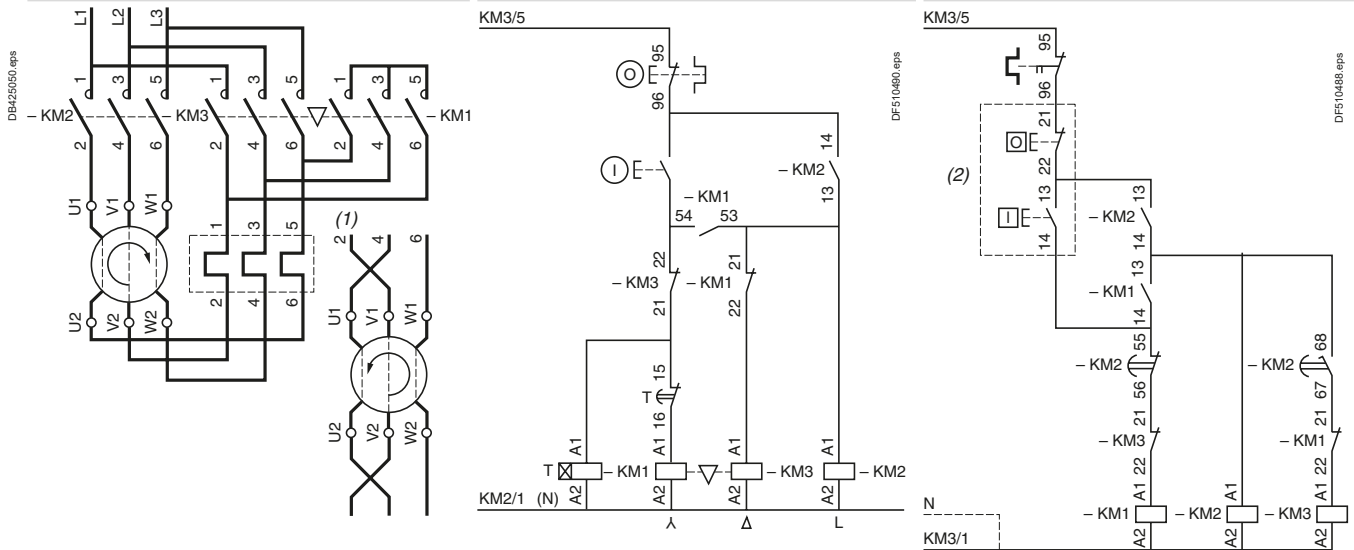
LC3	D090A à D180A	D320A
b	153	137
c	with LAD S	145
	with LAD S and sealing cover	149

Schemes

LC3 K, LC3 D09A to D80
LC3 D090A to D320A

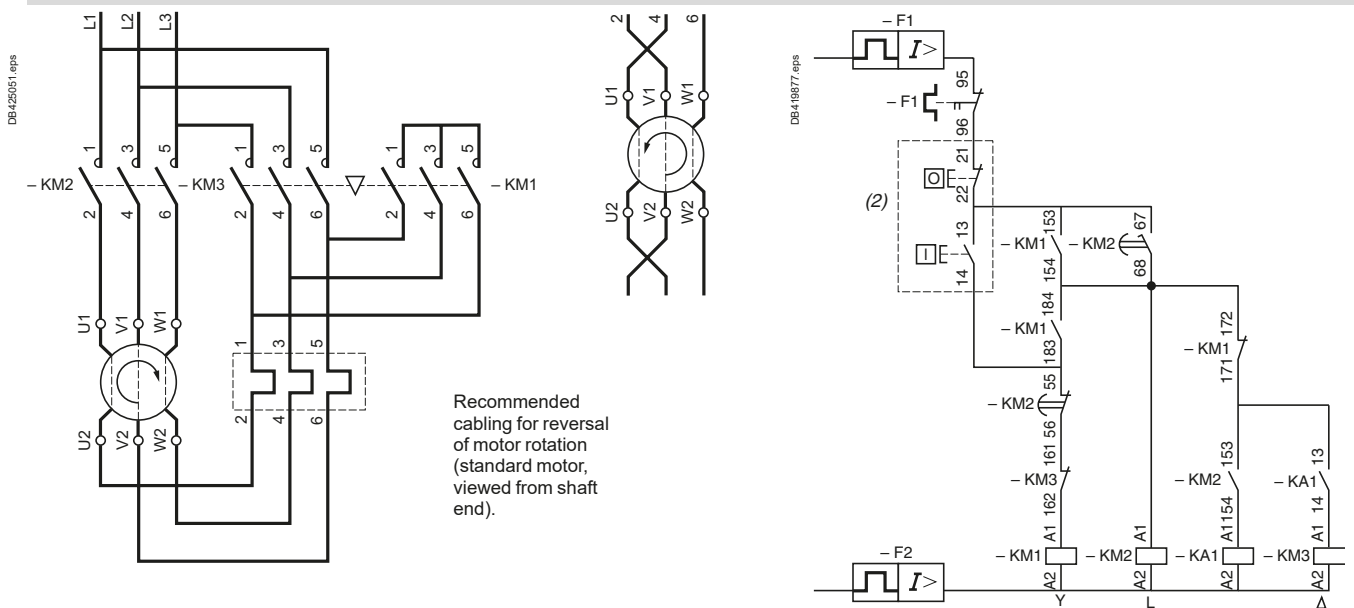
LC3 K

LC3 D



Note: LC3 D09A to D18A: Mechanical interlock between KM3 and KM1.

LC3 D115 and D150



(1) Recommended cabling for reversal of motor rotation (standard motor, viewed from shaft end).

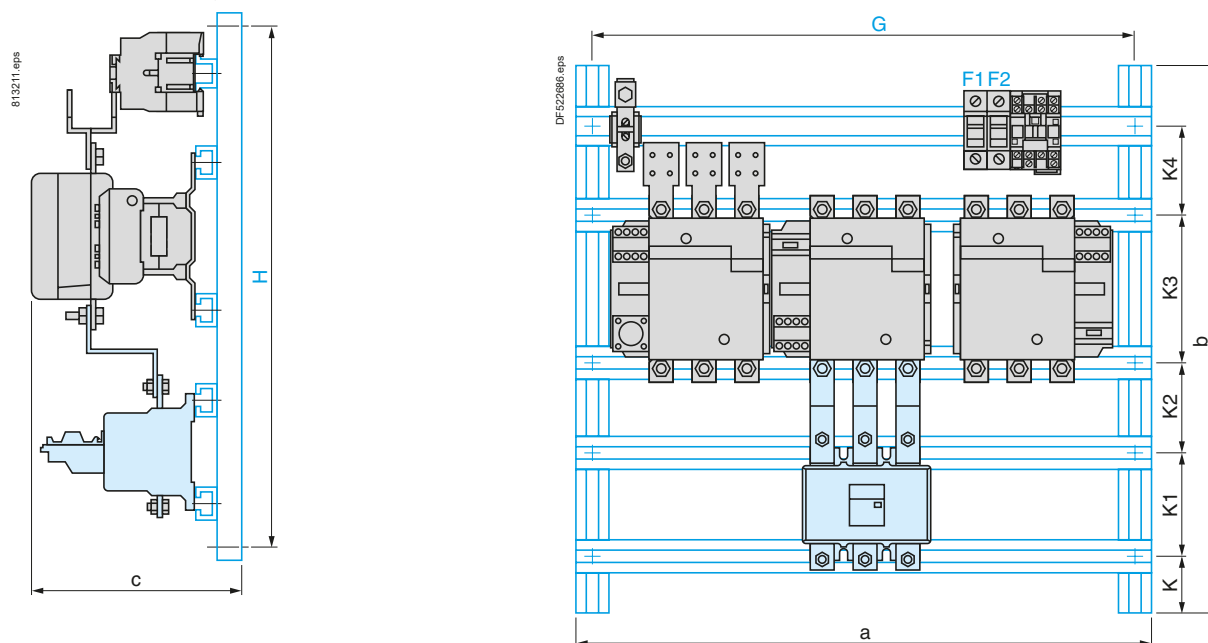
(2) Remote control.

Dimensions

Chassis mounted starters

Pre-assembled: **LC3 F185 to LC3 F400**

For customer assembly: **2 x LC1 F●●● and 1 x LC1 D150 or 3 x LC1 F●●●**



LC3 F185 or **2 x LC1 F●●● + 1 x LC1 D**
with components **F185**

LC3 F225 or **3 x LC1 F●●●** with components **F225**

LC3 F265 or **3 x LC1 F●●●** with components **F265**

LC3 F330 or **3 x LC1 F●●●** with components **F330**

LC3 F400 or **3 x LC1 F●●●** with components **F400**

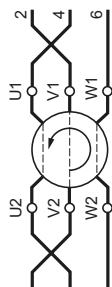
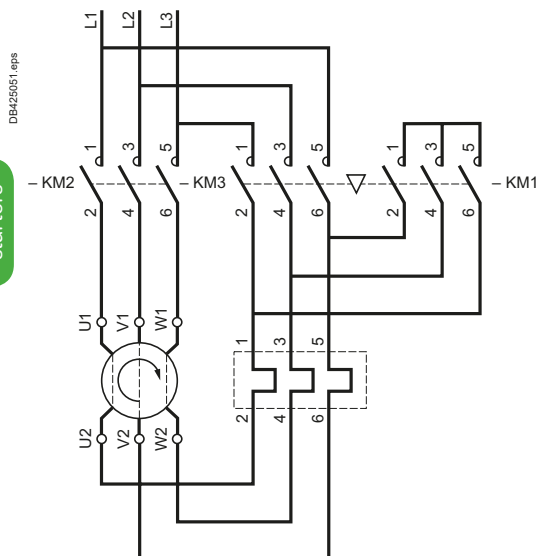
a	b	c	G	H	K	K1	K2	K3	K4
565	675	235	525	625	160	110	80	110	80
565	675	235	525	625	160	110	80	110	80
665	775	266	625	725	165	110	100	110	110
765	975	276	725	825	195	140	100	110	180
765	975	276	725	925	195	140	100	180	110

Schemes

Star-delta starters

LC3 F185 to F400

Open
pre-cabled
motor
starters



Recommended cabling for reversal of motor rotation
(standard motor, viewed from shaft end).

