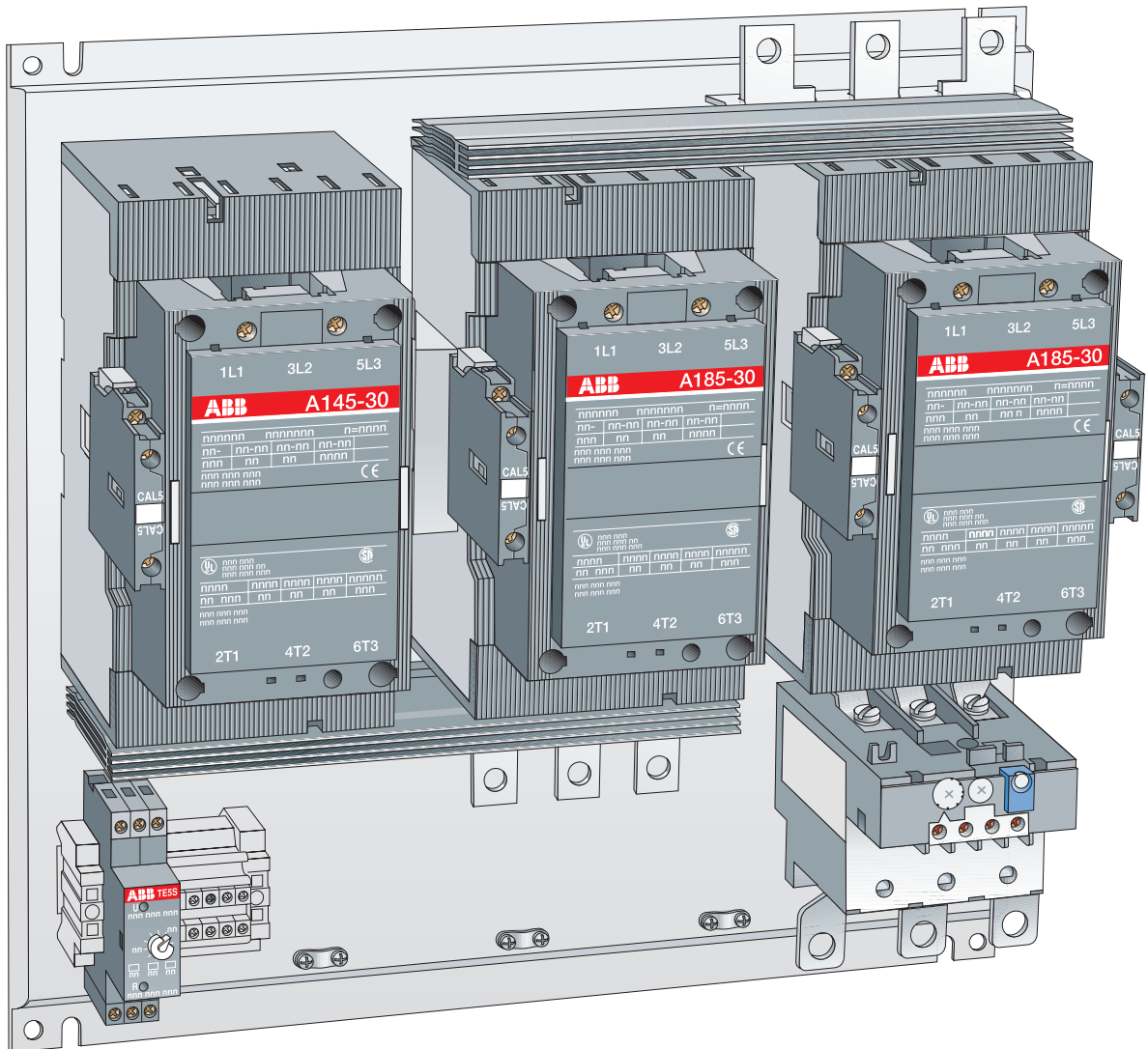


A-line Starter combinations in kit form, open type version

1SFC133001C0201



General information

Starter combinations in kit-form (open type version) for three-phase asynchronous motors:

- in compliance with standard IEC 60 947-4-1
- operational voltage up to 690 V, 50 or 60 Hz.
- motor rating up to 670 kW, at 400 V
- air temperature close to contactors ≤ 55 °C
- for complete co-ordination tables type 1 and 2 see www.abb.com/lowvoltage click on Product coordination

How to use the selection tables:

Ordering example:

Star-Delta starter

- Motor power rating 160 kW at 400 V / 50 Hz

- Control voltage 110 V / 50 Hz

See page 10 and 11 for selection of components for Star-Delta starters above 132 kW, 400 V.
(Translation table for rated motor power and current on page 17).

- Main contactor KM 1 A 185-30-22 1SFL 49 1001 R**8422**
- Delta contactor KM 3 A 185-30-11 1SFL 49 1001 R**8411**
- Star contactor KM 2 A 145-30-11 1SFL 47 1001 R**8411**

84 Coil voltage code is selected according to table on page 12.

- Overload Relay TA 200 DU **200** 1SAZ 42 1201 R**1006**

06 Selected according to table on page 12.

Current setting range for overload relay based on rated motor current $\times 0,58$.

- Timer TE 5 S - **120** 1SBN 02 0010 R**1002**

2 Rated Control Voltage according to table on page 13.

- Connection bars BED 185 1SFN 08 4903 R1000

Optional / additional accessories like terminal shrouds, terminal extensions, interlocks and mounting plates are also included in the selection tables.

A-line Starter combinations in kit form, open type version

General information	2
Direct - On - Line starters in kit form	4
Reversing starters in kit form	6
Star - Delta starters A 9...A 110 in kit form (7.5 - 90 kW, 400 V)	8
Star-Delta starters A 145..AF 750 in kit form (132 - 670 kW, 400 V)	10
Selection of overload relays and coil voltage codes	12
Accessories	13
Main circuit diagram	14
Exploded view Star-Delta-starters A 145...AF 750 (132 - 670 kW, 400 V)	16
Motor Nominal Powers and Currents	17

Direct-On-Line starters in kit form

Motor rating, 50-60 Hz, kW					Contactor KM 1 Type Order code	Overload relay Type Order code	Terminal shroud ¹⁾ Type Order code	Terminal extension ²⁾ Type Order code
220- 240 V	380- 400 V	415 V	440 V	660- 690 V				
2,2	4	4	4	5.5	A 9-30-10 1SBL 14 1001 R□□10	TA 25 DU 1SAZ 21 1201 R10□□	Not applicable	Not applicable
3	5.5	5.5	5.5	7.5	A 12-30-10 1SBL 16 1001 R□□10	TA 25 DU 1SAZ 21 1201 R10□□	Not applicable	Not applicable
4	7.5	9	9	9	A 16-30-10 1SBL18 1001 R□□10	TA 25 DU 1SAZ 21 1201 R10□□	Not applicable	Not applicable
6.5	11	11	15	15	A 26-30-10 1SBL 24 1001 R□□10	TA 25 DU 1SAZ 21 1201 R10□□	Not applicable	Not applicable
9	15	15	18.5	18.5	A 30-30-10 1SBL 28 1001 R□□10	TA 25 DU 1SAZ 21 1201 R10□□	Not applicable	Not applicable
11	18.5	18.5	22	22	A 40-30-10 1SBL 32 1001 R□□10	TA 42 DU 1SAZ 31 1201 R10□□	Not applicable	Not applicable
15	22	25	25	30	A 50-30-11 1SBL 35 1001 R□□11	TA 75 DU 1SAZ 32 1201 R10□□	Not applicable	Not applicable
18.5	30	37	37	37	A 63-30-11 1SBL 37 1001 R□□11	TA 75 DU 1SAZ 32 1201 R10□□	Not applicable	Not applicable
22	37	40	40	40	A 75-30-11 1SBL 41 1001 R□□11	TA 75 DU 1SAZ 32 1201 R10□□	Not applicable	Not applicable
25	45	55	55	55	A 95-30-11 1SFL 43 1001 R□□11	TA 110 DU 1SAZ 41 1201 R10□□	Not applicable	Not applicable
30	55	59	59	75	A 110-30-11 1SFL 45 1001 R□□11	TA 110 DU 1SAZ 41 1201 R10□□	Not applicable	Not applicable
45	75	75	75	110	A 145-30-11 1SFL 47 1001 R□□11	TA 200 DU 1SAZ 42 1201 R10□□	1set LT 185-AC 1SFN 12 4701 R 1000 LT 200/A 1SAZ 40 1901 R 1001	LX 185 1SFN 07 4701 R1000
55	90	90	90	132	A 185-30-11 1SFL 49 1001 R□□11	TA 200 DU 1SAZ 42 1201 R10□□	1set LT 185-AC 1SFN 12 4701 R1000 LT 200/A 1SAZ 40 1901 R1001	LX 185 1SFN 07 4701 R1000 LW 185 1SFN 07 4707 R1000
59	110	110	110	160	A 210-30-11 1SFL 51 1001 R□□11	TA 450 DU 1SAZ 51 1201 R10□□	1set LT 300-AC 1SFN 12 5101 R1001	LX 300 1SFN 07 5110 R1000
80	140	140	140	200	A 260-30-11 1SFL 53 1001 R□□11	TA 450 DU 1SAZ 51 1201 R10□□	1set LT 300-AC 1SFN 12 5101 R1001	LX 300 1SFN 07 5110 R1000
90	160	160	160	250	A 300-30-11 1SFL 55 1001 R□□11	TA 450 DU 1SAZ 51 1201 R10□□	1set LT 300-AC 1SFN 12 5101 R1001	LX 300 1SFN 07 5110 R1000
110	200	220	220	315	AF 400-30-11 1SFL 57 7001 R□□11	E 500 DU 1SAX 71 1001 R0001	1set LT 460-AC 1SFN 12 5701 R1000	LX 460 1SFN 07 5710 R1000
132	250	250	250	355	AF 460-30-11 1SFL 59 7001 R□□11	E 500 DU 1SAX 71 1001 R0001	1set LT 460-AC 1SFN 12 5701 R1000	LX 460 1SFN 07 5710 R1000
160	315	355	355	500	AF 580-30-11 1SFL 61 7001 R□□11	E 800 DU 1SAX 81 1001 R0001	1set LT 750-AC 1SFN 12 6101 R1000	LX 750 1SFN 07 6110 R1000
220	400	425	450	600	AF 750-30-11 1SFL 63 7001 R□□11	E 800 DU 1SAX 81 1001 R0001	1set LT 750-AC 1SFN 12 6101 R1000	LX 750 1SFN 07 6110 R1000

1) Alternative shrouds - see page 13

2) Terminal enlargements - see page 13

>> Overload relays and coil voltage codes page 12
>> Accessories page 13

>> Circuit diagrams page 14
>> Motor Nominal powers and currents page 17

Reversing starters in kit form

Motor rating, 50-60 Hz, kW					Contactors KM 1 + KM 2 Type Order code	Overload relay Type Order code	Connection bars Type Order code	Terminal shroud ¹⁾ Type Order code
220- 240 V	380- 400 V	415 V	440 V	660- 690 V	2 x A 9-30-10 1SBL 14 1001 R□□10	TA 25 DU 1SAZ 21 1201 R10□□	BEM 16-30 1SBN 08 1401 R1000	Not applicable
3	5.5	5.5	5.5	7.5	2 x A 12-30-10 1SBL 16 1001 R□□10	TA 25 DU 1SAZ 21 1201 R10□□	BEM 16-30 1SBN 08 1401 R1000	Not applicable
4	7.5	9	9	9	2 x A 16-30-10 1SBL 18 1001 R□□10	TA 25 DU 1SAZ 21 1201 R10□□	BEM 16-30 1SBN 08 1401 R1000	Not applicable
6,5	11	11	15	15	2 x A 26-30-10 1SBL 24 1001 R□□10	TA 25 DU 1SAZ 21 1201 R10□□	BEM 26-30 1SBN 08 2401 R1000	Not applicable
9	15	15	18.5	18.5	2 x A 30-30-10 1SBL 28 1001 R□□10	TA 25 DU 1SAZ 21 1201 R10□□	BEM 40-30 1SBN 08 2801 R1000	Not applicable
11	18.5	18.5	22	22	2 x A 40-30-10 1SBL 32 1001 R□□10	TA 42 DU 1SAZ 31 1201 R10□□	BEM 40-30 1SBN 08 2801 R1000	Not applicable
15	22	25	25	30	2 x A 50-30-11 1SBL 35 1001 R□□11	TA 75 DU 1SAZ 32 1201 R10□□	BEM 75-30 1SBN 08 3501 R1000	Not applicable
18.5	30	37	37	37	2 x A 63-30-11 1SBL 37 1001 R□□11	TA 75 DU 1SAZ 32 1201 R10□□	BEM 75-30 1SBN 08 3501 R1000	Not applicable
22	37	40	40	40	2 x A 75-30-11 1SBL 41 1001 R□□11	TA 75 DU 1SAZ 32 1201 R10□□	BEM 75-30 1SBN 08 3501 R1000	Not applicable
25	45	55	55	55	2 x A 95-30-11 1SFL 43 1001 R□□11	TA 110 DU 1SAZ 41 1201 R10□□	BEM 110-30 1SFN 08 4301 R1000	Not applicable
30	55	59	59	75	2 x A 110-30-11 1SFL 45 1001 R□□11	TA 110 DU 1SAZ 41 1201 R10□□	BEM 110-30 1SFN 08 4301 R1000	Not applicable
45	75	75	75	110	2 x A 145-30-11 1SFL 47 1001 R□□11	TA 200 DU 1SAZ 42 1201 R10□□	BEM 185-30 1SFN 08 4701 R1000	2 set LT 185-AC 1SFN 12 4701 R1000 LT 200/A 1SAZ 40 1901 R1001
55	90	90	90	132	2 x A 185-30-11 1SFL 49 1001 R□□11	TA 200 DU 1SAZ 42 1201 R10□□	BEM 185-30 1SFN 08 4701 R1000	2 set LT 185-AC 1SFN 12 4701 R1000 LT 200/A 1SAZ 40 1901 R1001
59	110	110	110	160	2 x A 210-30-11 1SFL51 1001 R□□11	TA 450 DU 1SAZ 51 1201 R10□□	BEM 300-30 1SFN 08 5101 R1000	2 set LT 300-AC 1SFN 12 5101 R1000
80	140	140	140	200	2 x A 260-30-11 1SFL 53 1001 R□□11	TA 450 DU 1SAZ 51 1201 R10□□	BEM 300-30 1SFN 08 5101 R1000	2 set LT 300-AC 1SFN 12 5101 R1000
90	160	160	160	250	2 x A 300-30-11 1SFL 55 1001 R□□11	TA 450 DU 1SAZ 51 1201 R10□□	BEM 300-30 1SFN 08 5101 R1000	2 set LT 300-AC 1SFN 12 5101 R1000
110	200	220	220	315	2 x AF 400-30-11 1SFL 57 7001 R□□11	E 500 DU 1SAX 71 1001 R0001	BEM 460-30 1SFN 08 5701 R1000	2 set LT 460-AC 1SFN 12 5701 R1000
132	250	250	250	355	2 x AF 460-30-11 1SFL59 7001 R□□11	E 500 DU 1SAX 71 1001 R0001	BEM 460-30 1SFN 08 5701 R1000	2 set LT 460-AC 1SFN 12 5701 R1000
160	315	355	355	500	2 x AF 580-30-11 1SFL 61 7001 R□□11	E 800 DU 1SAX 81 1001 R0001	BEM 750-30 1SFN 08 6101 R1000	2 set LT 750-AC 1SFN 12 6101 R1000
220	400	425	450	600	2 x AF 750-30-11 1SFL 63 7001 R□□11	E 800 DU 1SAX 81 1001 R0001	BEM 750-30 1SFN 08 6101 R1000	2 set LT 750-AC 1SFN 12 6101 R1000

1) Alternative shrouds - see page 13

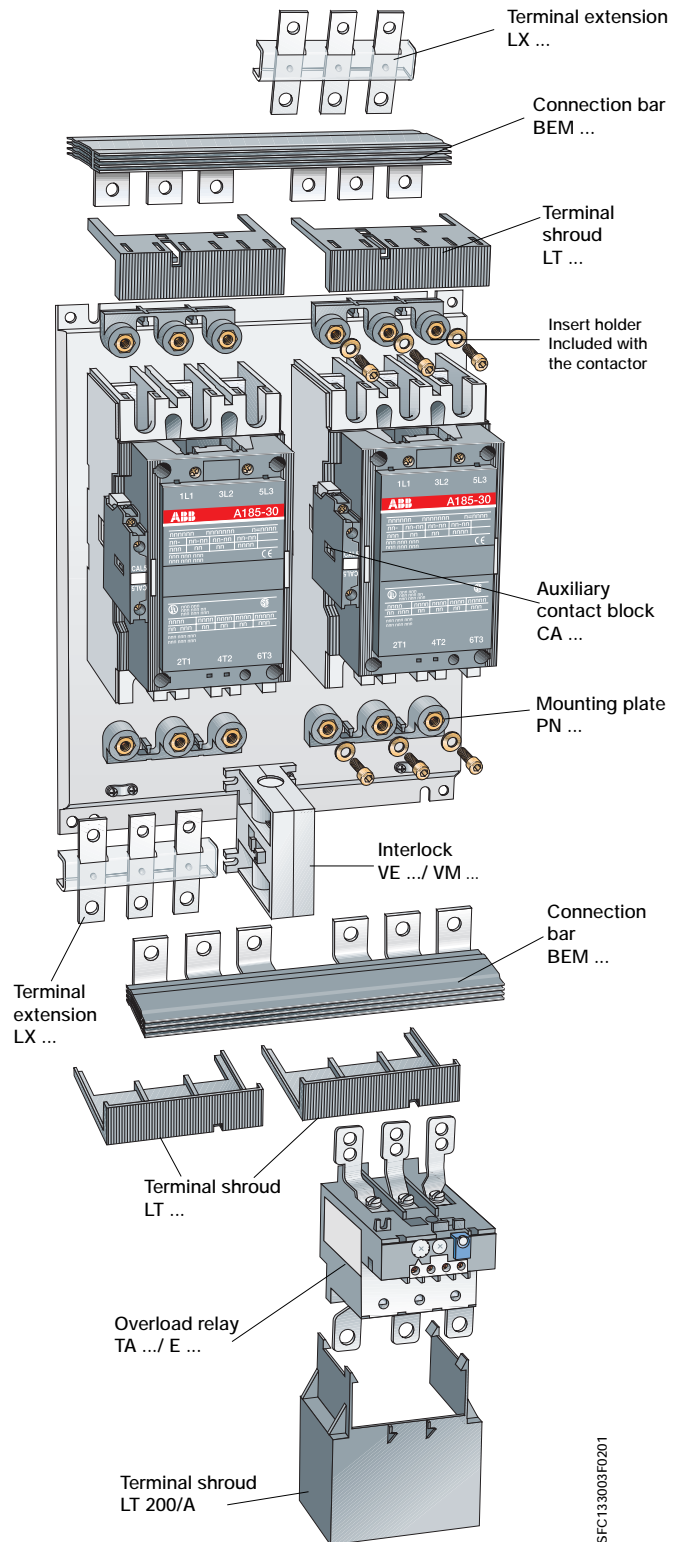
>> Overload relays and coil voltage codes page 12
>> Accessories page 13

>> Circuit diagrams page 14
>> Motor Nominal powers and currents page 17

Reversing starters in kit form

Terminal extension ²⁾ Type Order code	Interlock Type Order code	Mounting plate Type Order code
Not applicable	VE 5-1 1SBN 03 0110 R1000	Not applicable
Not applicable	VE 5-1 1SBN 03 0110 R1000	Not applicable
Not applicable	VE 5-1 1SBN 03 0110 R1000	Not applicable
Not applicable	VE 5-1 1SBN 03 0110 R1000	Not applicable
Not applicable	VE 5-1 1SBN 03 0110 R1000	Not applicable
Not applicable	VE 5-1 1SBN 03 0110 R1000	Not applicable
Not applicable	VE 5-2 1SBN 03 0210 R1000	Not applicable
Not applicable	VE 5-2 1SBN 03 0210 R1000	Not applicable
Not applicable	VE 5-2 1SBN 03 0210 R1000	Not applicable
Not applicable	VE 5-2 1SBN 03 0210 R1000	PN 110-21 1SFN 09 4301 R1000
Not applicable	VE 5-2 1SBN 03 0210 R1000	PN 110-21 1SFN 09 4301 R1000
2 x LX 185 1SFN074710R1000	VM 300H 1SFN 03 4700 R1000	PN 185-21 1SFN 09 4701 R1000
.		
2 x LX 185 1SFN 074710R1000	VM 300H 1SFN 03 4700 R1000	PN 185-21 1SFN 09 4701 R1000
.		
2 x LX 300 SFN 075110R1000	VM 300H 1SFN 03 4700 R1000	PN 300-21 1SFN 09 5101 R1000
2 x LX 300 1SFN 075110R1000	VM 300H 1SFN 03 4700 R1000	PN 300-21 1SFN 09 5101 R1000
2 x LX 300 1SFN 075110R1000	VM 300H 1SFN 03 4700 R1000	PN 300-21 1SFN 09 5101 R1000
2 x LX 460 1SFN 075710R1000	VM 750H 1SFN 03 5700 R1000	PN 460-21 1SFN 09 5701 R1000
2 x LX 460 1SFN 075710R1000	VM 750H 1SFN 03 5700 R1000	PN 460-21 1SFN 09 5701 R1000
2 x LX 750 1SFN 076110R1000	VM 750H 1SFN 03 5700 R1000	PN 750-21 1SFN 09 6101 R1000
2 x LX 750 1SFN 076110R1000	VM 750H 1SFN 03 5700 R1000	PN 750-21 1SFN 09 6101 R1000

2) Terminal enlargements - see page 13



1SFC133003F0201

Star-Delta starters A9...A110 in kit form

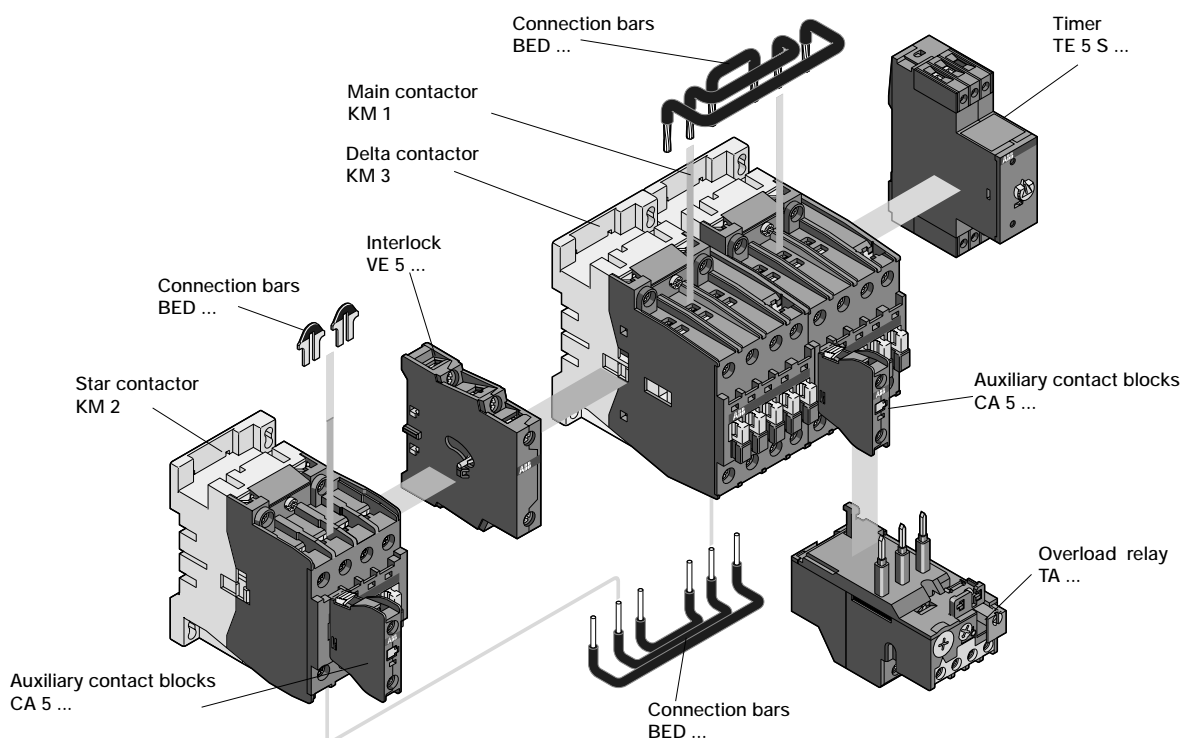
Motor rating, 50-60 Hz, kW						Contactors Main KM 1 Type Order code	Delta KM 3 Type Order code	StarKM 2 Type Order code	Overload relay Type Order code
220 230V	240V	380- 400V	415V	440V	660- 690V				
4	4	7.5	7.5	7.5	5.5	A 9-30-10 1SBL 14 1001 R□□10	A 9-30-01 1SBL 14 1001 R□□01	A 9-30-01 1SBL 14 1001 R□□01	TA 25 DU 1SAZ 21 1201 R10□□
5.5	5.5	11	11	11	7.5	A 12-30-10 1SBL 16 1001 R□□10	A 12-30-01 1SBL 16 1001 R□□01	A 9-30-01 1SBL 14 1001 R□□01	TA 25 DU 1SAZ 21 1201 R10□□
9	11	15	15	15	11	A 16-30-10 1SBL 18 1001 R□□10	A 16-30-01 1SBL 18 1001 R□□01	A 12-30-01 1SBL 16 1001 R□□01	TA 25 DU 1SAZ 21 1201 R10□□
12.5	12.5	22	22	25	15	A 26-30-10 1SBL 24 1001 R□□10	A 26-30-01 1SBL 24 1001 R□□01	A 16-30-01 1SBL 18 1001 R□□01	TA 25 DU 1SAZ 21 1201 R10□□
15	15	25	25	30	18.5	A 30-30-10 1SBL 28 1001 R□□10	A 30-30-01 1SBL 28 1001 R□□01	A 26-30-01 1SBL 24 1001 R□□01	TA 25 DU 1SAZ 21 1201 R10□□
18.5	22	37	37	37	37	A 40-30-10 1SBL 32 1001 R□□10	A 40-30-01 1SBL 32 1001 R□□01	A 26-30-01 1SBL 24 1001 R□□01	TA 42 DU 1SAZ 31 1201 R10□□
25	25	45	45	45	45	A 50-30-00 1SBL 35 1001 R□□00	A 50-30-00 1SBL 35 1001 R□□00	A 30-30-01 1SBL 28 1001 R□□01	TA 75 DU 1SAZ 32 1201 R10□□
30	33	55	55	59	59	A 63-30-00 1SBL 37 1001 R□□00	A 63-30-00 1SBL 37 1001 R□□00	A 40-30-01 1SBL 32 1001 R□□01	TA 75 DU 1SAZ 32 1201 R10□□
37	40	63	70	70	63	A 75-30-00 1SBL 41 1001 R□□00	A 75-30-00 1SBL 41 1001 R□□00	A 50-30-00 1SBL 35 1001 R□□00	TA 75 DU 1SAZ 32 1201 R10□□
45	45	75	75	90	90	A 95-30-00 1SFL 43 1001 R□□00	A 95-30-00 1SFL 43 1001 R□□00	A 75-30-00 1SFL 41 1001 R□□00	TA 110 DU 1SAZ 41 1201 R10□□
55	59	90	100	100	132	A 110-30-00 1SFL 45 1001 R□□00	A 110-30-00 1SFL 45 1001 R□□00	A 95-30-00 1SFL 43 1001 R□□00	TA 110 DU 1SAZ 41 1201 R10□□

>> Overload relays and coil voltage codes page 12
>> Accessories page 13

>> Circuit diagrams page 15
>> Motor Nominal powers and currents page 17

Star-Delta starters A9...A110 in kit form

Timer Type Order code	Connection bars Type Order code	Interlock Type Order code	Auxiliary contact block Type Order code	Mounting plate Type Order code
TE 5 S 1SBN 02 0010 R100□	BED 16-1 1SBN 08 1403 R1001	VE 5-1 1SBN 03 0110 R1000	2 x CA 5-10 1SBN 01 0010 R1010	Not applicable
TE 5 S 1SBN 02 0010 R100□	BED 16-1 1SBN 08 1403 R1001	VE 5-1 1SBN 03 0110 R1000	2 x CA 5-10 1SBN 01 0010 R1010	Not applicable
TE 5 S 1SBN 02 0010 R100□	BED 16-1 1SBN 08 1403 R1001	VE 5-1 1SBN 03 0110 R1000	2 x CA 5-10 1SBN 01 0010 R1010	Not applicable
TE 5 S 1SBN 02 0010 R100□	BED 26-1 1SBN 08 2403 R1001	VE 5-1 1SBN 03 0110 R1000	2 x CA 5-10 1SBN 01 0010 R1010	Not applicable
TE 5 S 1SBN 02 0010 R100□	BED 40-1 1SBN 08 2803 R1001	VE 5-1 1SBN 03 0110 R1000	2 x CA 5-10 1SBN 01 0010 R1010	Not applicable
TE 5 S 1SBN 02 0010 R100□	BED 40-1 1SBN 08 2803 R1001	VE 5-1 1SBN 03 0110 R1000	2 x CA 5-10 1SBN 01 0010 R1010	Not applicable
TE 5 S 1SBN 02 0010 R100□	BED 50-1 1SBN 08 3503 R1001	VE 5-2 1SBN 03 0210 R1000	3 x CA 5-10 1SBN 01 0010 R1010 1 x CA 5-01 1SBN 01 0010 R1001	Not applicable
TE 5 S 1SBN 02 0010 R100□	BED 50-1 1SBN 08 3503 R1001	VE 5-2 1SBN 03 0210 R1000	3 x CA 5-10 1SBN 01 0010 R1010 1 x CA 5-01 1SBN 01 0010 R1001	Not applicable
TE 5 S 1SBN 02 0010 R100□	BED 75-1 1SBN 08 4103 R1001	VE 5-2 1SBN 03 0210 R1000	3 x CA 5-10 1SBN 01 0010 R1010 2 x CA 5-01 1SBN 01 0010 R1001	Not applicable
TE 5 S 1SBN 02 0010 R100□	BED 95 1SBN 08 4303 R1000	VE 5-2 1SBN 03 0210 R1000	3 x CA 5-10 1SBN 01 0010 R1010 2 x CA 5-01 1SBN 01 0010 R1001	PN 110-41 1SBN 09 4303 R1000
TE 5 S SBN 02 0010 R100□	BED 110 1SBN 08 4503 R1000	VE 5-2 1SBN 03 0210 R1000	3 x CA 5-10 1SBN 01 0010 R1010 2 x CA 5-01 1SBN 01 0010 R1001	PN 110-41 1SBN 09 4303 R1000



Star-Delta starters A 145..AF 750 in kit form

Motor rating, 50-60 Hz, kW						Contactors Main KM 1	Delta KM 3	Star KM 2	Overload relay
220- 230V	240V	380- 400V	415V	440V	660- 690V	Type Order code	Type Order code	Type Order code	Type Order code
75	75	132	132	140	160	A 145-30-22 1SFL 47 1001 R□□22	A 145-30-11 1SFL 47 1001 R□□11	A 110-30-11 1SFL 45 1001 R□□11	TA 200 DU 1SAZ 42 1201 R10□□
90	90	160	160	180	250	A 185-30-22 1SFL 49 1001 R□□22	A 185-30-11 1SFL 49 1001 R□□11	A 145-30-11 1SFL 47 1001 R□□11	TA 200 DU 1SAZ 42 1201 R10□□
110	110	200	200	220	315	A 210-30-22 1SFL 51 1001 R□□22	A 210-30-11 1SFL 51 1001 R□□11	A 185-30-11 1SFL 49 1001 R□□11	TA 450 DU 1SAZ 51 1201 R10□□
140	140	220	250	250	355	A 260-30-22 1SFL 531001R□□22	A 260-30-11 1SFL 53 1001 R□□11	A 210-30-11 1SFL 51 1001 R□□11	TA 450 DU 1SAZ 51 1201 R10□□
160	160	250	250	295	450	A 300-30-22 1SFL 55 1001 R□□22	A 300-30-11 1SFL 55 1001 R□□11	A 260-30-11 1SFL 53 1001 R□□11	TA 450 DU 1SAZ 51 1201 R10□□
180	200	355	355	450	560	AF 400-30-22 1SFL 57 7001 R□□22	AF 400-30-11 1SFL 57 7001 R□□11	A 260-30-11 1SFL 53 1001 R□□11	E 500 DU 1SAX 71 1001 R0001
250	250	450	475	500	670	AF 460-30-22 1SFL 59 7001 R□□22	AF 460-30-11 1SFL 59 7001 R□□11	A 300-30-11 1SFL 55 1001 R□□11	E 500 DU 1SAX 71 1001 R0001
315	315	560	600	600	750	AF 580-30-22 1SFL 61 7001 R□□22	AF 580-30-11 1SFL 61 7001 R□□11	AF 400-30-11 1SFL 57 7001 R□□11	E 800 DU 1SAX 81 1001 R0001
400	400	670	670	750	900	AF 750-30-22 1SFL 63 7001 R□□22	AF 750-30-11 1SFL 63 7001 R□□11	AF 460-30-11 1SFL 59 7001 R□□11	E 800 DU 1SAX 81 1001 R0001

>> Overload relays and coil voltage codes page 12
>> Accessories page 13

>> Circuit diagrams page 15
>> Motor Nominal powers and currents page 17

Star-Delta starters A 145...AF 750 in kit form

Timer	Connection bars	Terminal shroud (2)	Terminal extension (3)	Interlock	Mounting plate
Type Order code	Type Order code	Type Order code	Type Order code	Type Order code	Type Order code
TE 5 S 1SBN 02 0010 R100□	BED 145A 1SFN 08 4703 R1000	2 set LT 185-AC 1SFN 12 4701 R1000 LT 200/A 1SAZ 40 1901 R1001	2 x LX 185 1SFN 07 4710 R1000	VM 300H 1SFN 03 4700 R1000	PN 185-41 1SFN 09 4903 R1000
TE 5 S 1SBN 02 0010 R100□	BED 185 1SFN 08 4903 R1000	3 set LT 185-AC 1SFN 12 4701 R1000 LT 200/A 1SAZ 40 1901 R1001	2 x LX 185 1SFN 07 4710 R1000 1 x LT 185-AY 1SFN 12 4704 R1000	VM 300H 1SFN 03 4700 R1000	PN 185-41 1SFN 09 4903 R1000
TE 5 S 1SBN 02 0010 R100□	BED 210 1SFN 08 5103 R1000	2 set LT 300-AC 1SFN 12 5101 R1000 1 set LT 185-AC 1SFN 12 4701 R1000 LT 185-AY 1SFN 12 4704 R1000	2 x LX 300 1SFN 07 5110 R1000	VM 300H 1SFN 03 4700 R1000	PN 300-41 1SFN 09 5503 R1000
TE 5 S 1SBN 02 0010 R100□	BED 300 1SFN 08 5303 R1000	3 set LT 300-AC 1SFN 12 5101 R1000 LT 300-AY 1SFN 12 5104 R1000	2x LX 300 1SFN 07 5110 R1000	VM 300H 1SFN 03 4700 R1000	PN 300-41 1SFN 09 5503 R1000
TE 5 S 1SBN 02 0010 R100□	BED 300 1SFN 08 5303 R1000	3 set LT 300-AC 1SFN 12 5101 R1000 LT 300-AY 1SFN 12 5104 R1000	2x LX 300 1SFN 07 5110 R1000	VM 300H 1SFN 03 4700 R1000	PN 300-41 1SFN 09 5503 R1000
(1)	BED 400 1SFN 08 5503 R1000	2 set LT 460-AC 1SFN 12 5701 R1000 1 set LT 300-AC 1SFN 12 5101 R1000 LT 300-AY 1SFN 12 5104 R1000	2x LX 460 1SFN 07 5710 R1000	VM 300/460H 1SFN 03 5100 R1000	PN 460-41 1SFN 09 5703 R1000
(1)	BED 400 1SFN 08 5503 R1000	2 set LT 460-AC 1SFN 12 5701 R1000 1 set LT 300-AC 1SFN 12 5101 R1000 LT 300-AY 1SFN 12 5104 R1000	2x LX 460 1SFN 07 5710 R1000	VM 300/460H 1SFN 03 5100 R1000	PN 460-41 1SFN 09 5703 R1000
(1)	BED 580 1SFN 08 5903 R1000	2 set LT 750-AC 1SFN 12 6101 R1000 1 set LT 460-AC 1SFN 12 5701 R1000	2x LX 750 1SFN 07 6110 R1000	VM 750H 1SFN 03 5700 R1000	PN 750-41 1SFN 09 6103 R1000
(1)	BED 580 1SFN 08 5903 R1000	2 set LT 750-AC 1SFN 12 6101 R1000 1 set LT 460-AC 1SFN 12 5701 R1000	2x LX 750 1SFN 07 6110 R1000	VM 750H 1SFN 03 5700 R1000	PN 750-41 1SFN 09 6103 R1000

(1) Contactor Relay type N + TP timer can be used as the AF contactors have a slight delay in closing.

(2) Alternative schrouds - see page 13.

(3) Terminal enlargements - see page 13.

Exploded view: see page 16

Selection of overload relays and coil voltage codes

Overload relay



TA 25 DU

SB7286CZ



TA 75 DU

SB7287CZ



TA 200 DU

1SFT0189-005



E 500 DU

SB 8178C4

Setting Range (A)	Type	Order code	Pack ^{ing} pieces
0.1-0.16	TA 25 DU 0.16	1SAZ 21 1201 R1005	1
0.16-0.25	TA 25 DU 0.25	1SAZ 21 1201 R1009	1
0.25-0.4	TA 25 DU 0.40	1SAZ 21 1201 R1013	1
0.4-0.63	TA 25 DU 0.63	1SAZ 21 1201 R1017	1
0.63-1.0	TA 25 DU 1.0	1SAZ 21 1201 R1021	1
1.0-1.4	TA 25 DU1.4	1SAZ 21 1201 R1023	1
1.3-1.8	TA 25 DU1.8	1SAZ 21 1201 R1025	1
1.7-2.4	TA 25 DU 2.4	1SAZ 21 1201 R1028	1
2.2-3.1	TA 25 DU 3.1	1SAZ 21 1201 R1031	1
2.8-4.0	TA 25 DU 4.0	1SAZ 21 1201 R1033	1
3.5-5.0	TA 25 DU 5.0	1SAZ 21 1201 R1035	1
4.5-6.5	TA 25 DU 6.5	1SAZ 21 1201 R1038	1
6.0-8.5	TA 25 DU 8.5	1SAZ 21 1201 R1040	1
7.5-11	TA 25 DU 11	1SAZ 21 1201 R1043	1
10-14	TA 25 DU 14	1SAZ 21 1201 R1045	1
13-19	TA 25 DU 19	1SAZ 21 1201 R1047	1
18-25	TA 25 DU 25	1SAZ 21 1201 R1051	1
24-32 ¹⁾	TA 25 DU 32	1SAZ 21 1201 R1053	1
18-25	TA 42 DU 25	1SAZ 31 1201 R1001	1
22-32	TA 42 DU 32	1SAZ 31 1201 R1002	1
29-42	TA 42 DU 42	1SAZ 31 1201 R1003	1
18-25	TA 75 DU 25	1SAZ 32 1201 R1001	1
22-32	TA 75 DU 32	1SAZ 32 1201 R1002	1
29-42	TA 75 DU 42	1SAZ 32 1201 R1003	1
36-52	TA 75 DU 52	1SAZ 32 1201 R1004	1
45-63	TA 75 DU 63	1SAZ 32 1201 R1005	1
60-80	TA 75 DU 80	1SAZ 32 1201 R1006	1
29-42	TA 80 DU 42	1SAZ 33 1201 R1003	1
36-52	TA 80 DU 52	1SAZ 33 1201 R1004	1
45-63	TA 80 DU 63	1SAZ 33 1201 R1005	1
60-80	TA 80 DU 80	1SAZ 33 1201 R1006	1
65-90	TA 110 DU 90	1SAZ 41 1201 R1001	1
80-110	TA 110 DU 110	1SAZ 41 1201 R1002	1
66-90	TA 200 DU 90	1SAZ 42 1201 R1001	1
80-110	TA 200 DU 110	1SAZ 42 1201 R1002	1
100-135	TA 200 DU 135	1SAZ 42 1201 R1003	1
110-150	TA 200 DU 150	1SAZ 42 1201 R1004	1
130-175	TA 200 DU 175	1SAZ 42 1201 R1005	1
150-200	TA 200 DU 200	1SAZ 42 1201 R1006	1
130-185	TA 450 DU 185	1SAZ 51 1201 R1001	1
165-235	TA 450 DU 235	1SAZ 51 1201 R1002	1
220-310	TA 450 DU 310	1SAZ 51 1201 R1003	1
65-200	E 200 DU	1SAX 51 1001 R0001	1
105-320	E 320 DU	1SAX 61 1001 R0002	1
170-500	E 500 DU	1SAX 71 1001 R0001	1
270-800	E 800 DU	1SAX 81 1001 R0001	1

Coil voltage codes

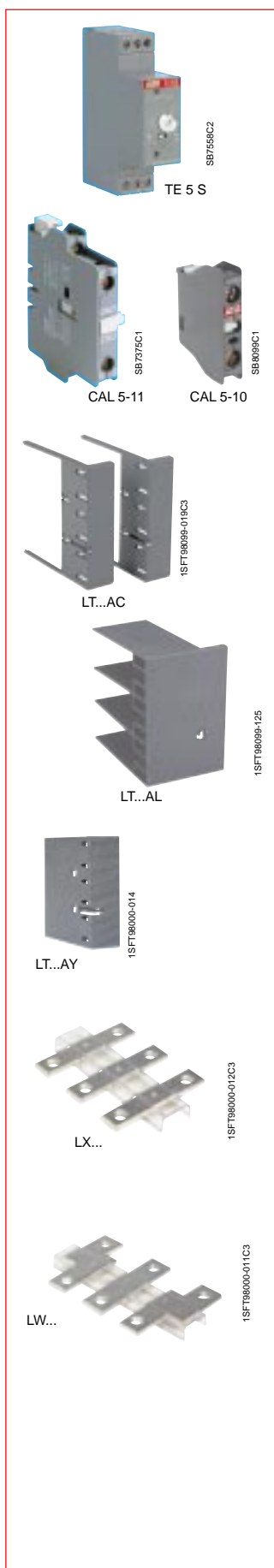
Coil voltages and codes A 9 ... A 300

Voltage (V) 50 Hz : █ █	Voltage (V) 60 Hz : █ █	Voltage code : █ █
24	24	8 1
48	48	8 3
110	110 ...120	8 4
220 ... 230	230 ... 240	8 0
230 ... 240	240 ... 260	8 8
380 ... 400	400 ... 415	8 5
400 ... 415	480	8 6

Coil voltages and codes AF 400 ... AF 750

Voltage (V) 50...60 Hz : █ █	Voltage (V) DC █ █	Voltage code : █ █
-	24 ... 60	6 8
48 ...130	48 ...130	6 9
100 ... 250	100 ... 250	7 0

Accessories



Electronic Timer

Rated control voltage U_c V	Type	Order code	Pack ^{ing} pieces
24 a.c/d.c	TE 5S-24	1SBN 02 0010 R1001	1
110...120 a.c.	TE 5S-120	1SBN 02 0010 R1002	1
220...240 a.c.	TE 5S-240	1SBN 02 0010 R1003	1
380...440 a.c.	TE 5S-440	1SBN 02 0010 R1004	1

Auxiliary Contact Block

Position	Contacts NO NC	Type	Order code	Pack ^{ing} pieces
Front mounted	1 -	CA 5-10	1SBN 01 0010 R1010	10
	- 1	CA 5-01	1SBN 01 0010 R1001	10
Side mounted	1 1	CAL 5-11	1SBN 01 0020 R1011	2
	1 1	CAL 5-11B	1SBN 01 0420 R3311	1

LT ... Terminal Shrouds

For contactors	Type	Order code	Pack ^{ing} pieces
A 145 ... A 185 with connectors	LT 185-AC	1SFN 12 4701 R1000	2
A 145 ... A 185 with lugs	LT 185-AL	1SFN 12 4703 R1000	2
A 145 ... A 185 with short. bar LY 185 or between A 145 and TA 200DU or between A 185 and TA 200DU	LT 185-AY	1SFN 12 4704 R1000	1
A 210 ... A 300 with connectors	LT 300-AC	1SFN 12 5101 R1000	2
A 210 ... A 300 with lugs	LT 300-AL	1SFN 12 5103 R1000	2
A 210 ... A 300 with short. bar LY 300	LT 300-AY	1SFN 12 5104 R1000	1
AF 400 ... AF 460 with connectors	LT 460-AC	1SFN 12 5701 R1000	2
AF 400 ... AF 460 with lugs	LT 460-AL	1SFN 12 5703 R1000	2
AF 580 ... AF 750 with connectors	LT 750-AC	1SFN 12 6101 R1000	2
AF 580 ... AF 750 with lugs	LT 750-AL	1SFN 12 6103 R1000	2

LX... Terminal Extension Pieces

For contactors	Dimensions hole \varnothing mm bar mm	Type	Order code	Pack ^{ing} set
A 145 ... A185	8.5 17.5 x 5	LX 185	1SFN 07 4710 R1000	1
A 210 ... A 300	10.5 20 x 5	LX 300	1SFN 07 5110 R1000	1
AF 400 ... AF 460	10.5 25 x 5	LX 460	1SFN 07 5710 R1000	1
AF 580 ... AF 750	13 40 x 6	LX 750	1SFN 07 6110 R1000	1

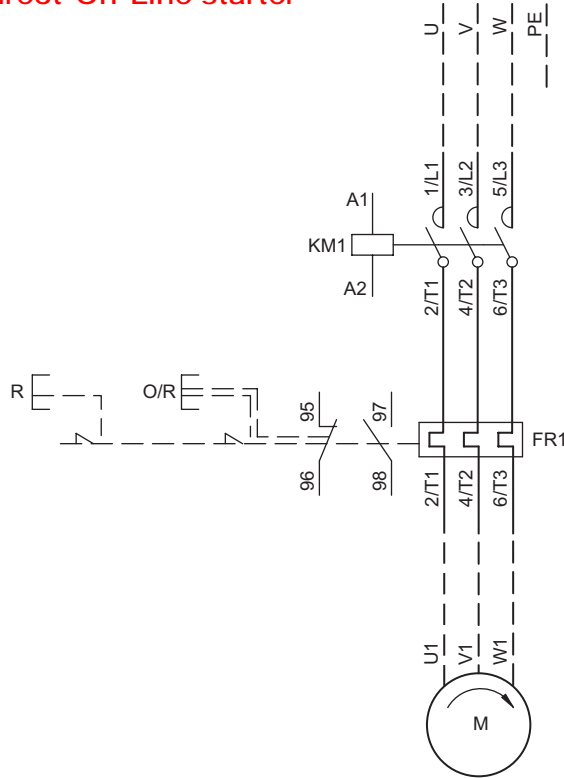
LW... Enlargement Pieces

For contactors	Dimensions hole \varnothing mm bar mm	Type	Order code	Pack ^{ing} set
A 95, A 110	6.5 15 x 3	LW 110	1SFN 07 4307 R1000	1
A 145 ... A 185	10.5 17.5 x 5	LW 185	1SFN 07 4707 R1000	1
A 210 ... A 300	10.5 20 x 5	LW 300	1SFN 07 5107 R1000	1
AF 400 ... AF 460	10.5 25 x 5	LW 460	1SFN 07 5707 R1000	1
AF 580 ... AF 750	13 40 x 6	LW 750	1SFN 07 6107 R1000	1

For a complete list of accessories, technical data, dimension drawings, coordination tables, approvals and the complete product assortment please contact your local ABB sales office or visit abb.com/lowvoltage (Control Products).

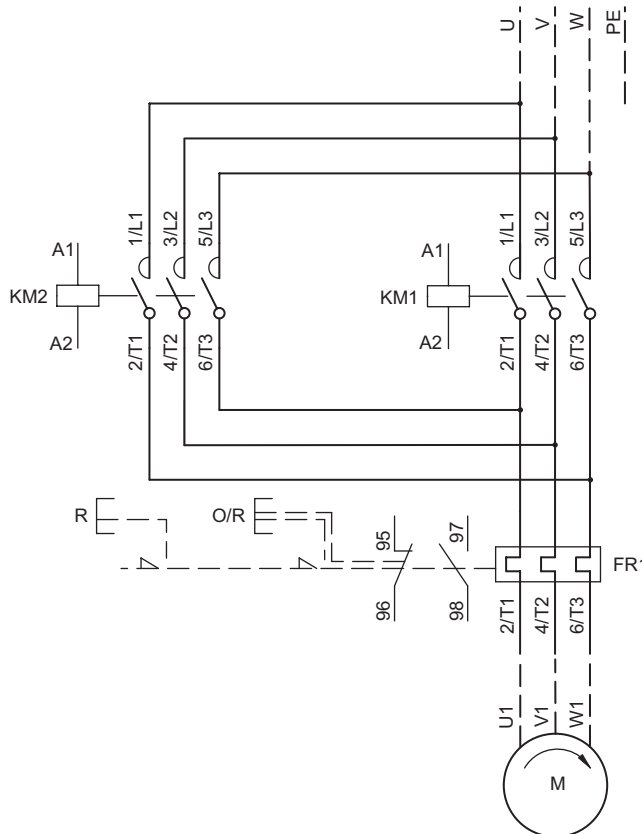
Main circuit diagram

Direct-On-Line starter



1SFC133005F0201

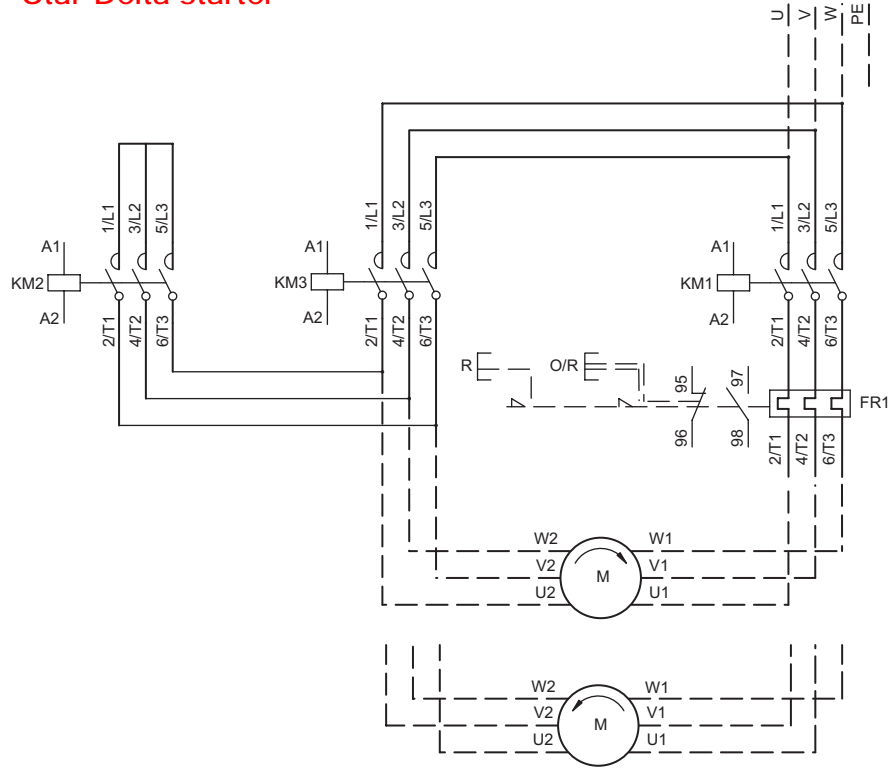
Reversing starter



1SFC133006F0201

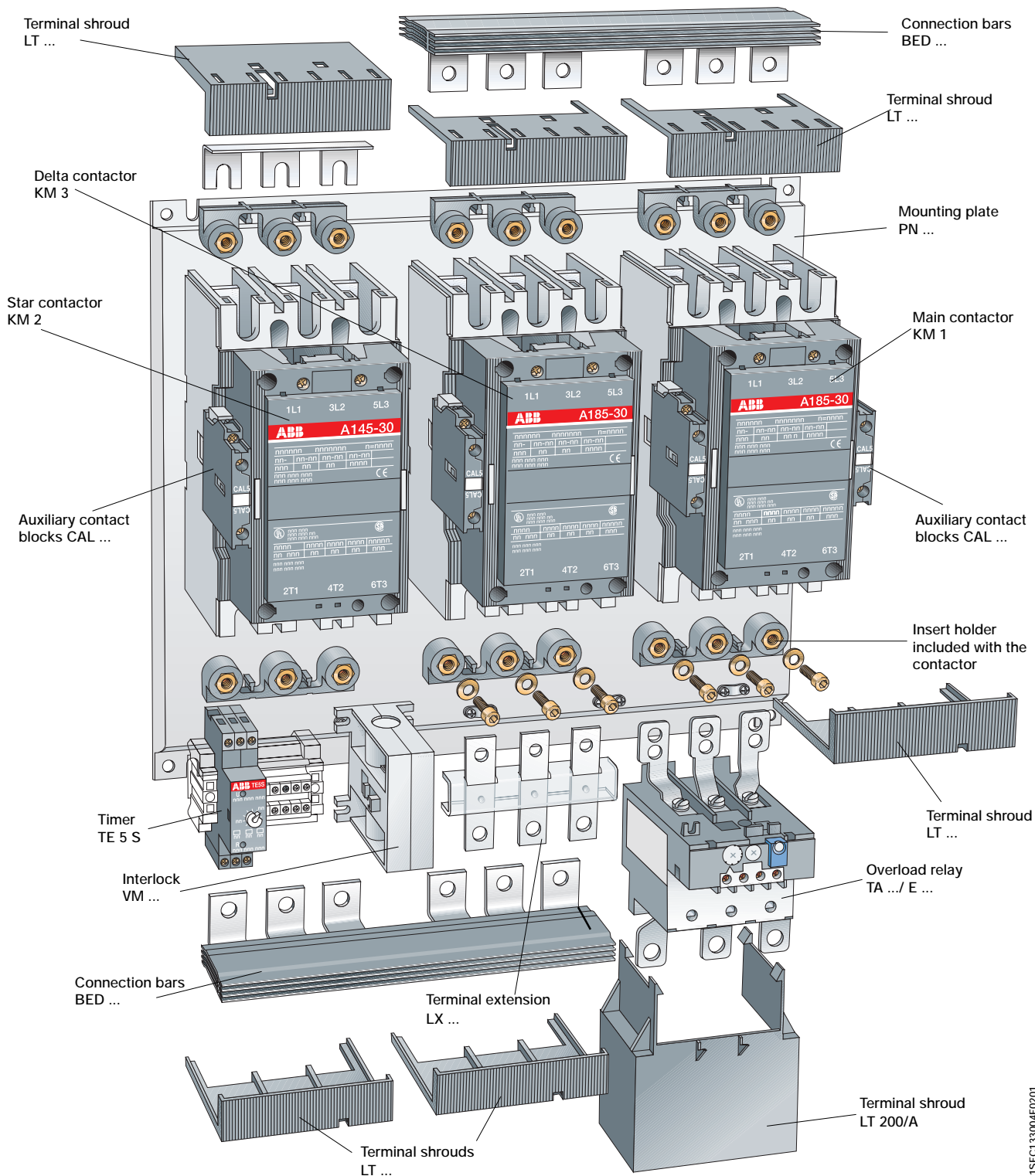
Main circuit diagram

Star-Delta starter



1SFC133007F0201

Exploded view Star-Delta starters A 145...AF 750



1SFC13300-4F0201

Motor Nominal Powers and Currents

The currents given below concern standard, 1500 r.p.m. 50 Hz, three-phase cage motors.
 These values are given for guidance and may vary according to the motor manufacturer and depending on the number of poles.

Motor power		Motor nominal current at:							
kW	PS = hp	220-230 V	240 V	380 V 380-400 V	415 V	440 V	500 V	600 V	660-690 V
		A	A	A	A	A	A	A	A
0.06	1/12	0.38	0.35	0.22	0.20	0.19	0.16	0.12	—
0.09	1/8	0.55	0.50	0.33	0.30	0.28	0.24	0.21	—
0.12	1/6	0.76	0.68	0.42	0.40	0.37	0.33	0.27	—
0.18	1/4	1.1	1	0.64	0.60	0.55	0.46	0.40	—
0.25	1/3	1.4	1.38	0.88	0.85	0.76	0.59	0.56	—
0.37	1/2	2.1	1.93	1.22	1.15	1.06	0.85	0.77	0.7
0.55	3/4	2.7	2.3	1.5	1.40	1.25	1.20	1.02	0.9
0.75	1	3.3	3.1	2	2	1.67	1.48	1.22	1.1
1.1	1.5	4.9	4.1	2.6	2.5	2.26	2.1	1.66	1.5
1.5	2	6.2	5.6	3.5	3.5	3.03	2.6	2.22	2
2.2	3	8.7	7.9	5	5	4.31	3.8	3.16	2.9
2.5	3.4	9.8	8.9	5.7	5.5	4.9	4.3	3.59	3.3
3	4	11.6	10.6	6.6	6.5	5.8	5.1	4.25	3.5
3.7	5	14.2	13	8.2	7.5	7.1	6.2	5.2	4.4
4	5.5	15.3	14	8.5	8.4	7.6	6.5	5.6	4.9
5	6.8	18.9	17.2	10.5	10	9.4	8.1	6.9	6
5.5	7.5	20.6	18.9	11.5	11	10.3	8.9	7.5	6.7
6.5	8.8	23.7	21.8	13.8	12.5	12	10.4	8.7	8.1
7.5	10	27.4	24.8	15.5	14	13.5	11.9	9.9	9
8	11	28.8	26.4	16.7	15.4	14.4	12.7	10.6	9.7
9	12.5	32	29.3	18.3	17	15.8	13.9	11.6	10.6
11	15	39.2	35.3	22	21	19.3	16.7	14.1	13
12.5	17	43.8	40.2	25	23	21.9	19	16.1	15
15	20	52.6	48.2	30	28	26.3	22.5	19.3	17.5
18.5	25	64.9	58.7	37	35	32	28.5	23.5	21
20	27	69.3	63.4	40	37	34.6	30.6	25.4	23
22	30	75.2	68	44	40	37.1	33	27.2	25
25	34	84.4	77.2	50	47	42.1	38	30.9	28
30	40	101	92.7	60	55	50.1	44	37.1	33
37	50	124	114	72	66	61.9	54	45.4	42
40	54	134	123	79	72	67	60	49.1	44
45	60	150	136	85	80	73.9	64.5	54.2	49
51	70	168	154	97	90	83.8	73.7	61.4	56
55	75	181	166	105	96	90.3	79	66.2	60
59	80	194	178	112	105	96.9	85.3	71.1	66
75	100	245	226	140	135	123	106	90.3	82
80	110	260	241	147	138	131	112	96.3	86
90	125	292	268	170	165	146	128	107	98
100	136	325	297	188	182	162	143	119	107
110	150	358	327	205	200	178	156	131	118
129	175	420	384	242	230	209	184	153	135
132	180	425	393	245	242	214	186	157	140
140	190	449	416	260	250	227	200	167	145
147	200	472	432	273	260	236	207	173	152
160	220	502	471	295	280	256	220	188	170
180	245	578	530	333	320	289	254	212	190
184	250	590	541	340	325	295	259	217	200
200	270	626	589	370	340	321	278	235	215
220	300	700	647	408	385	353	310	260	235
250	340	803	736	460	425	401	353	295	268
257	350	826	756	475	450	412	363	302	280
295	400	948	868	546	500	473	416	348	320
315	430	990	927	580	535	505	445	370	337
355	480	1080	1010	636	580	549	483	405	366
400	545	1250	1130	710	650	611	538	450	410
450	610	1410	1270	800	740	688	608	508	460
475	645	1490	1340	850	780	730	645	540	485
500	680	1570	1420	890	830	770	680	565	510
560	760	1750	1580	1000	920	860	760	630	570
600	810	—	—	1080	990	920	810	680	610
670	910	—	—	1200	1100	1030	910	760	680

World-wide support, industry-wide experience

Automation Technology Products

The ABB Automation Technology Products division provides products, systems, software and services for the automation and optimization of discrete, process and batch manufacturing operations plus related business aspects. Key technologies include measurement control, instrumentation, process analysis, drives and motors, power electronics, robots, and low voltage products; all geared toward one common Industrial^{IT} architecture for real-time automation and information solutions across the business enterprise.

Low Voltage Products

The new range of motor control equipment is supported by technical documentation and co-ordination tables. This, together with improved design and more compact units makes it easier than ever to incorporate our products in your projects.

Interested in more information about:

- ABB Low Voltage Products offer?
- Co-ordination tables according to IEC 947-4-1?
- Downloads of catalogues and other marketing and technical documentation?
- Dimension drawings and wiring diagrams?

Please enter www.abb.com/lowvoltage or contact your local ABB sales office.

