Ratings AC3 380V 400V 415V kW	500V kW	660V 690V kW	Rated Current AC3 400V A	Wired to accept Overload Relay Relay Type	Type	Coil voltage [1] 24 24V 50/60Hz 0 / 230 220-240V 50Hz 3 / 400 380-415V 50Hz Order No	Pack pcs.	Weight kg/pc.
7,5	7,5	11	16	U3/32 U12/16	K3NY15 . . .	LA 3Y1 5Y.	1	0,9
15	18,5	15	30		K3NY26 . . .	LA 3Y2 6Y.	1	0,9
22	30	22	45	U3/42	K3Y40 . . .	LA 3Y4 0Y.	1	1,4
30	37	30	60		K3Y52 . . .	LA 3Y5 2Y.	1	1,8
45	55	45	85	U3/74	K3Y80 . . .	LA 3Y8 0Y.	1	3,5
55	75	55	109		K3Y100 . . .	LA 3Y1 AY.	1	3,7
75	90	90	150	U85	K3Y140 . . .	LA 3Y1 BY.	1	6,6
110	132	110	205		K3Y200 . . .	LA 3Y2 AY.	1	7
132	160	160	240	U180	K3Y240 . . .		1	15
160	180	180	300		K3Y300 . . .		1	15

Star-delta starters are wired to accept thermal overload relay. The thermal overload relay has to be ordered separately. For full load current setting use the YD-dial of thermal overload relay.

Ordering Example: Star-Delta Starter, open type, rated AC3 at 400V 205A rated control voltage 230V 50Hz - **Order Type: K3Y200 230 + U85 120**
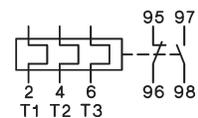
Thermal Overload Relays

Rated Motor Current A		Type	Order No	Pack pcs.	Weight kg/pc.	Wiring Diagram

For Star-Delta Starters K3Y15.. to K3Y40..

Rated Motor Current A		Type	Order No	Pack pcs.	Weight kg/pc.	Wiring Diagram
7	- 10,5	U12/16E 6 K3	LA 300 109 K3	1	0,10	
10,5	- 15,5	U12/16E 9 K3	LA 300 110 K3	1	0,10	95 97
14	- 19	U12/16E 11 K3	LA 300 111 K3	1	0,10	
18	- 24	U12/16E 14 K3	LA 300 112 K3	1	0,10	96 98
23	- 31	U12/16E 18 K3	LA 300 113 K3	1	0,10	2 4 6 T1 T2 T3

manual eset

For Star-Delta Starters K3Y15.. to K3Y52..

Rated Motor Current A		Type	Order No	Pack pcs.	Weight kg/pc.	Wiring Diagram
7	- 10,5	U3/32 6	LA 300 009	1	0,14	95 97
10,5	- 15,5	U3/32 9	LA 300 010	1	0,14	
14	- 19	U3/32 11	LA 300 011	1	0,14	96 98
18	- 24	U3/32 14	LA 300 012	1	0,14	2 4 6 T1 T2 T3
23	- 31	U3/32 18	LA 300 013	1	0,14	
30	- 41	U3/32 24	LA 300 014	1	0,14	manual and auto reset
40	- 55	U3/32 32	LA 300 026	1	0,14	
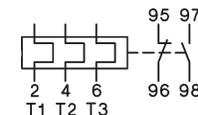
For Star-Delta Starters K3Y40.., K3Y52..

Rated Motor Current A		Type	Order No	Pack pcs.	Weight kg/pc.	Wiring Diagram
24	- 35	U3/42 20	LA 300 016	1	0,30	95 97
35	- 48	U3/42 28	LA 300 017	1	0,30	
48	- 73	U3/42 42	LA 300 018	1	0,30	96 98 2 4 6 T1 T2 T3
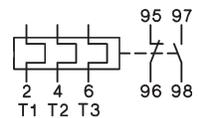
manual and auto reset

1) Coil voltage range and other coil voltages see page 82

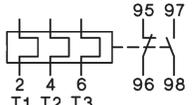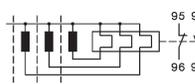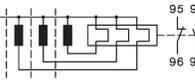| Components for Combinations						Auxiliary Contacts Built-in for use on Contactor			Free Space for Aux. Contact Blocks on Contactor		
Line Contactor	Delta Contactor	Star Contactor	Electronic Timer	Mechanical Interlock between K2 and K3	Star-Delta Starter Connector	Line K1	Delta K2	Star K3	Line K1	Delta K2	Star K3
K1 Type	K2 Type	K3 Type	K4 Type	Type	Type	NO/NC	NO/NC	NO/NC	HN.. or HA..		
K3-10ND01 + HN10	K3-10ND01	K3-10ND10 + HN10 + HN01	Y9A	LG10889	K3NY-VB10	-	-	-	3	4	2
K3-18ND01 + HN10	K3-18ND01	K3-14ND10 + HN10 + HN01	Y9A	LG10889	K3NY-VB10	-	-	-	3	4	2
K3-24A00 + HN10 + HN01	K3-24A00 + HN01	K3-24A00 + 2HN10 + HN01	Y9A	LG10889	K3Y-VB24	-	-	-	2	3	1
K3-32A00 + HN10 + HN01	K3-32A00 + HN01	K3-24A00 + 2HN10 + HN01	Y9A	LG10889	K3Y-VB24	-	-	-	2	3	1
K3-50A00 + HN01 + HN10	K3-50A00 + HN01	K3-32A00 + 2HN10 + HN01	Y9A	LG10890	-	-	-	-	2	3	1
K3-62A00 + HN01 + HN10	K3-62A00 + HN01	K3-50A00 + 2HN10 + HN01	Y9A	LG10890	-	-	-	-	2	3	1
K3-90A00 + HN01 + HN10	K3-90A00 + HN01	K3-90A00 + 2HN10 + HN01	Y9AL	LG11478	-	-	-	-	5	6	4
K3-115A00 + HN01 + HN10	K3-115A00 + HN01	K3-90A00 + 2HN10 + HN01	Y9AL	LG11478	-	-	-	-	5	6	4
K3-151A00 + HKT11	K3-151A00 + HKT11	K3-151A00 + HKT22	Y9AL	LG11223H	-	-	1/-	-/1	2	1	1
K3-176A00 + HKT11	K3-176A00 + HKT11	K3-151A00 + HKT22	Y9AL	LG11223H	-	-	1/-	-/1	2	1	1

Applications

The star-delta starting method is only practicable in such cases where the motor windings are connected in delta configuration for normal operation and the torque which is needed during the starting period is not higher than approx. 30% of the rated torque. The starting current drawn from the line will be approx. 2 to 2,7 times the rated motor current.

Time setting

The transition from start (star configuration) to normal operation (delta configuration) should be after the motor achieves practically full rotational speed. The use of star-delta timer Y9A with a dwell period of approx. 25ms provides a careful operation of motor and drive equipment.

Thermal Overload Relays

	Rated Motor Current A		Type Order No	Pack pcs.	Weight kg/pc.	Wiring Diagram
	For Star-Delta Starters K3Y80.., K3Y100..					
	35	- 48	U3/74 28 LA 300 019	1	0,40	
	48	- 73	U3/74 42 LA 300 020			95 97 96 98
	70	- 90	U3/74 52 LA 300 021			2 4 6 T1 T2 T3
	90	-112	U3/74 65 LA 300 022			manual and auto reset
	For Star-Delta Starters K3Y140.., K3Y200..					
	104	-156	U85 90 LA 100 123	1	0,90	95 97 96 98
	140	-207	U85 120 LA 100 124	1	0,90	manual eset
	For Star-Delta Starters K3Y240.., K3Y300..					
	208	- 312	U180 180	1	1,5	95 97 96 98 manual and auto reset

Star-Delta Starter Connector

For Star-Delta Starter Types	Type Order No	Pack pcs.	Weight kg/pc.
K3NY15, K3NY26	K3NY-VB10	1	0,02
K3Y40, K3Y52	K3Y-VB24	1	0,03

Additional Terminals

For Star-Delta Starter Types Line Conn. Motor Conn. Line Contactor Overload Relay	Cable cross-section mm²	Type Order No.	Pack pcs.	Weight kg/pc.
Single pole with Fingertouch Protection				
K3NY15, K3NY26 U12/16	0,75 - 10 solid 0,75 - 6 flex.	LG9339	6	0,009
Three-pole with Fingertouch Protection				
U3/42	4 - 35 strand. 4 - 25 flex.	LG7559	1	0,052

Electronic Timers for Star-Delta Starters

Rated Control Voltage V	Time Range s	Delay Time ms	Rated Current AC15 230V 400V A A		Type Order No.	Pack pcs.	Weight kg/pc.
24 - 60V AC	1 - 20	20 - 25	6	4	Y9A 60	1	0,075
110 - 415V AC	1 - 20	20 - 25	6	4	Y9A 415	1	0,075
24 - 60V~	1 - 20	40 - 80	6	4	Y9AL 60	1	0,075
110 - 415V~	1 - 20	40 - 80	6	4	Y9AL 415	1	0,075

Time repeat accuracy	± 1%		Power consumption at	24V 60V	0,2VA 5VA
Minimum interval between operations	2s				
Short circuit protection	4A gl (gG)			220-240V 380-415V	2VA 7VA

Mounting Bar

Specification	Type Order No.	Pack pcs.	Weight kg/pc.
For screw mounting of electronic timer Y9..	LG7735	10	0,09

Star-Delta Starters in Special Versions

Starters for Longer Starting Time

For longer starting times the thermal overload relay is mounted on delta-contactor. The motor is not protected in Y-connection. The timer used for this starter-type is the type Y91A, time range is 10 to 60s.
Principal wiring diagram see page 86.

Ordering Example: K3YL52 230

Starters with two Thermal Overload Relays on request
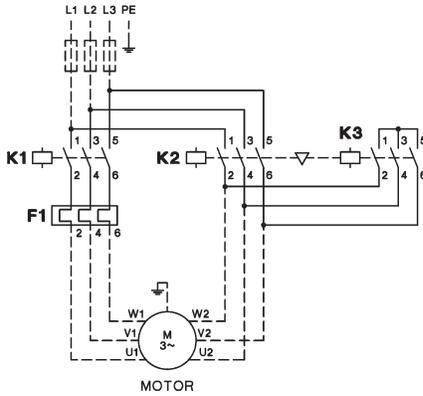
Basic circuit diagram see page 86

Star-Delta Starters

Wiring Diagrams Main Circuit

Terminal markings of contactors and relays according to DIN EN 50012
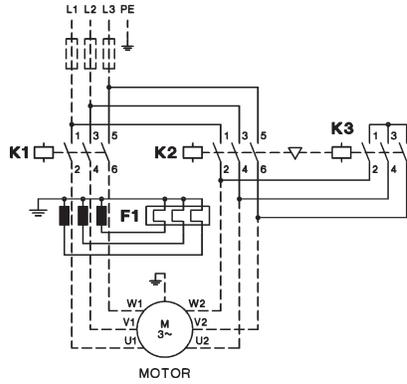Connections shown in main and circuits as broken lines are not included.

K3NY15 to K3Y100
with thermal overload relay U3/.. or U12/16
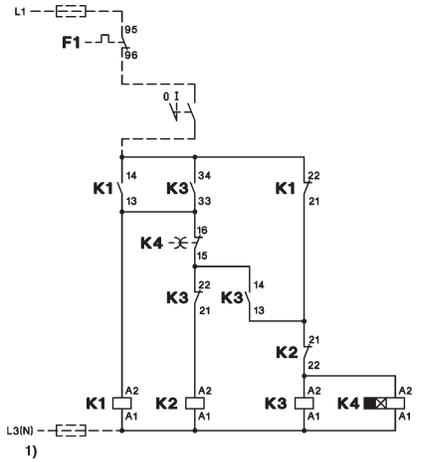
K3Y140 to K3Y300
with thermal overload relay U85 or U180
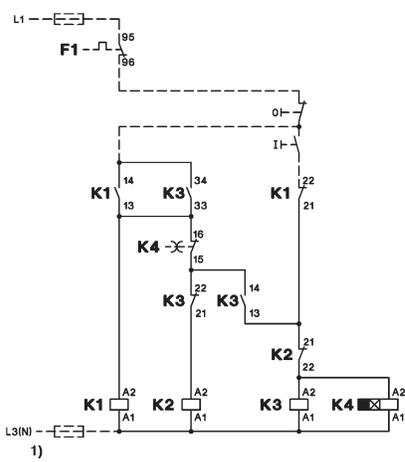

Wiring Diagrams Control Circuit

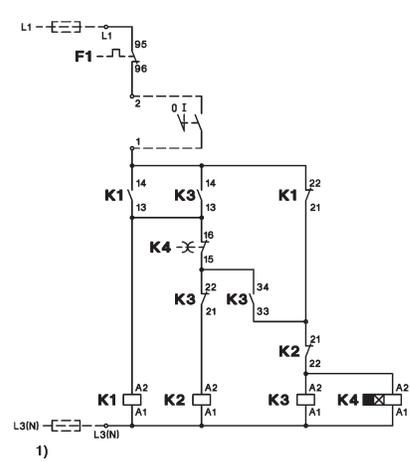**K3NY15 to K3Y52**
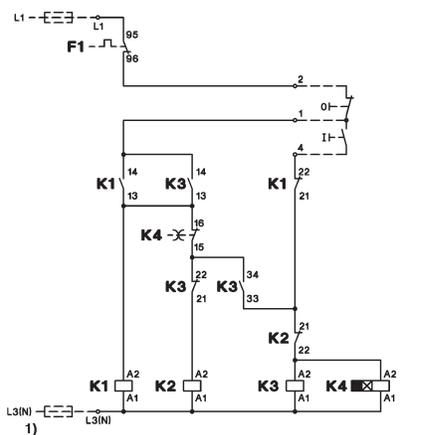operating with control switch

K3NY15 to K3Y52
operating with push buttons

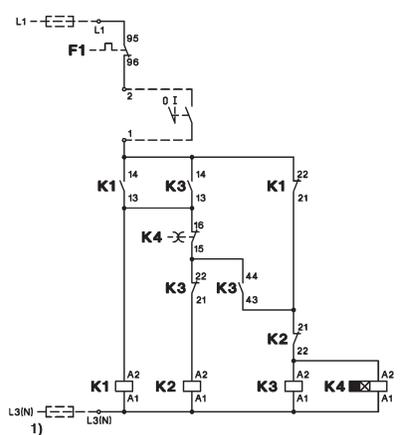**K3Y80 to K3Y200**
operating with control switch

1)

K3Y80 to K3Y200
operating with push buttons

K3Y240 to K3Y300
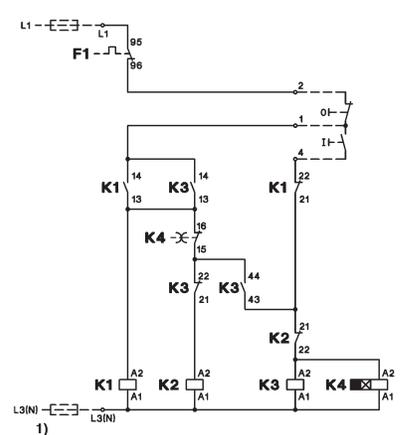operating with control switch

K3Y240 to K3Y300
operating with push buttons

1)

1) "N" Control voltage 230V
   "L3" Control voltage 400V