



Star-Delta Starters Open Type 92



Star-Delta Starters Enclosed
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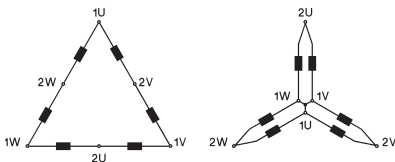
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Star-Delta Starters Open Type

AC Operated



Ratings				Rated Current	order separately	Type	230 400 ↓	Coil voltage ¹⁾ 220-240V 50Hz 380-415V 50Hz	Pack pcs.	Weight kg/pc.
AC3	380V	400V	415V							
kW	500V kW	660V kW	690V kW	AC3 400V A	Overload Relay Type					
7,5	7,5	11	16		U3/32 U12/16E K3	K3NY15 ...			1	0,9
15	18,5	15	30			K3NY26 ...			1	0,9
22	30	22	45		U3/42	K3Y40 ...			1	1,4
30	37	30	60			K3Y52 ...			1	1,8
45	55	45	85		U3/74	K3Y80 ...			1	3,5
55	75	55	109			K3Y100 ...			1	3,7
75	90	90	150		U85	K3Y140 ...			1	6,6
110	132	110	205			K3Y200 ...			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		Type	Pack pcs.	Weight kg/pc.	Wiring Diagram
A					
For Star-Delta Starters K3NY15.. to K3Y40..					
7	- 10,5	U12/16E 6 K3	1	0,10	
10,5	- 15,5	U12/16E 9 K3	1	0,10	
14	- 19	U12/16E 11 K3	1	0,10	
18	- 24	U12/16E 14 K3	1	0,10	
23	- 31	U12/16E 18 K3	1	0,10	
manual reset					



For Star-Delta Starters K3NY15.. to K3Y52..					
7 - 10,5		U3/32 6	1	0,14	
10,5 - 15,5		U3/32 9	1	0,14	
14 - 19		U3/32 11	1	0,14	
18 - 24		U3/32 14	1	0,14	
23 - 31		U3/32 18	1	0,14	
30 - 41		U3/32 24	1	0,14	
40 - 55		U3/32 32	1	0,14	
manual and auto reset					



For Star-Delta Starters K3Y40.., K3Y52..						
24	-	35	U3/42 20	1		0,30
35	-	48	U3/42 28	1		0,30
48	-	73	U3/42 42	1		0,30
manual and auto reset						

¹⁾ Coil voltage range and other coil voltages see page 100

Components for Combinations			Electronic Timer K4 Type	Mechanical Interlock between K2 and K3 Type	Star-Delta Starter Connector Type	Auxiliary Contacts Built-in for use on Contactor Line Delta Star K1 K2 K3 NO/NCNO/NCNO/NC			Free Space for Aux. Contact Blocks on Contactor Line Delta Star K1 K2 K3 HN.. or HA..		
Line Contactor	Delta Contactor	Star Contactor									
K1 Type	K2 Type	K3 Type									
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

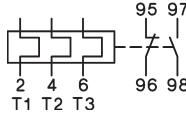
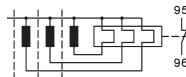
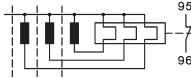
Applications

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	Pack pcs.	Weight kg/pc.	Wiring Diagram
	For Star-Delta Starters K3Y80.., K3Y100..				
	35 - 48	U3/74 28	1	0,40	
	48 - 73	U3/74 42	1	0,40	
	70 - 90	U3/74 52	1	0,40	
	90 - 112	U3/74 65	1	0,40	
				manual and auto reset	
	For Star-Delta Starters K3Y140.., K3Y200..				
	104 - 156	U85 90	1	0,90	
	140 - 207	U85 120	1	0,90	
				manual reset	
	For Star-Delta Starters K3Y240.., K3Y300..				
	208 - 312	U180 180	1	1,5	 manual and auto reset

Star-Delta Starters Enclosed Type

AC Operated



Ratings	Rated	Optional	Wired	Type	Coil voltage ¹⁾	Pack	Weight
AC3	Current	Extras	to accept		220-240V 50Hz	pcs.	kg/pc.
380V			Overload		380-415V 50Hz		
400V			Relay				
415V	500V	660V					
kW	kW	kW	Type				
		AC3					
		400V					
		A					

Plastic Enclosed, protected to IP65

7,5	7,5	11	16	ST	U3/32	K3NY15P ...	1	1,8
15	18,5	15	30	ST		K3NY26P ...	1	1,8
22	30	22	45	ST, H	U3/42	K3Y40P ...	1	3,8
30	37	30	60	ST, H		K3Y52P ...	1	4,2
45	55	45	85	ST, H	U3/74	K3Y80P ...	1	5,9
55	75	55	109	ST, H		K3Y100P ...	1	8,7

Sheet Steel Enclosed, protected to IP54

7,5	7,5	11	16	ST, H	U3/32	K3NY15B ...	1	2,8
15	18,5	15	30	ST, H		K3NY26B ...	1	2,8
22	30	22	45	ST, H	U3/42	K3Y40B ...	1	4,8
30	37	30	60	ST, H		K3Y52B ...	1	5,2
45	55	45	85	ST, H	U3/74	K3Y80B ...	1	15
55	75	55	109	ST, H		K3Y100B ...	1	15
75	90	90	150	ST, H	U85	K3Y140B ...	1	22
110	132	110	205	ST, H		K3Y200B ...	1	22

1) Coil voltage range and other coil voltages see page 100

Type-suffix for optional extras

Start-Stop Push Buttons	T ...
Selector Switch	W ...
Typical wiring diagrams see page 103-106	
Control Circuit Fuse <250V (1 piece)	ST ...
>250V (2 pieces)	ST ...
Run Hour Meter	H ...

Ordering Example: Star-Delta Starter, steel sheet enclosed, with selector switch and run hour meter rated AC3 at 400V 82A, rated control voltage 230V 50Hz - **Order Type: K3Y80BWH 230 + U3/74 52**

Enclosures for Star Delta Starter



for Starter	accept	Type	Pack	Weight
	Overload Relay		pcs.	kg/pc.
Plastic IP65				
K3NY15, K3NY26	U3/32	K3Y26P-G3	1	1,0
K3Y40, K3Y52	U3/42, U3/32	K3Y40/52P-G3	1	2,4
Sheet Steel IP54				
K3NY15, K3NY26	U3/32	K3Y26B-G3	1	3,4
K3Y40, K3Y52	U3/42, U3/32	K3Y40/52B-G3	1	3,4

Star-Delta Starter Connector



For Star-Delta Starter Types

K3NY15, K3NY26
K3Y40, K3Y52

Type

K3NY-VB10
K3Y-VB24

Pack
pcs.

1
1

Weight
kg/pc.

0,02
0,03

Additional Terminals



For Star-Delta Starter Types
Line Conn. Motor Conn.
Line Contactor Overload Relay

Cable
cross-section
mm²

Type

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 Starters¹⁾



Rated Control
Voltage
V

Time Range
s

Delay Time
ms

Rated Current AC15
230V 400V
A A

Type

Pack
pcs.

Weight
kg/pc.

24 - 60V AC
110 - 415V AC

1 - 20
1 - 20

20 - 25
20 - 25

6
6

4
4

Y9A 60
Y9A 415

1
1

0,075
0,075

24 - 60V~
110 - 415V~

1 - 20
1 - 20

40 - 80
40 - 80

6
6

4
4

Y9AL 60
Y9AL 415

1
1

0,075
0,075

Time repeat accuracy	± 1%
Minimum interval between operations	2s
Short circuit protection	4A gl (gG)

Power consumption at	24V 60V	0,2VA 5VA
	220-240V 380-415V	2VA 7VA

1) not suitable for contactors K3-450 - K3-1200

Mounting Bar



Specification

Type

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 104.

Ordering Example: K3YL52 230

Starters with two Thermal Overload Relays on request

Basic circuit diagram see page 104

Reversing Contactors with Mechanical Interlock

AC Operated



Ratings	Rated Current	Vorbereitet für Einbau	Wired to accept Overload Relay page 120 Type	Type	Coil voltage ¹⁾	Pack pcs.	Weight kg/pc.
AC3 380V 400V 415V kW	500V kW	660V 690V kW	AC3 400V A	110 230 400 ↓	110V 50Hz 220-240V 50Hz 380-415 50Hz		

Open Type

4	5,5	5,5	10	U3/32 U12/16E K3	K3NWU10 ...	1	0,6
7,5	10	7,5	18		K3NWU18 ...	1	0,6
11	15	15	24	U3/42	K3WU24 ...	1	1,2
15	18,5	18,5	32		K3WU32 ...	1	1,4
18,5	18,5	18,5	40		K3WU40	1	1,4
22	30	30	50	U3/74	K3WU50 ...	1	2,5
30	37	37	62		K3WU62 ...	1	2,5
37	45	45	74		K3WU74 ...	1	2,5



Sheet Steel Enclosed, protected to IP54

4	5,5	5,5	10	U3/32	K3NWU10B ...	1	3,9
7,5	10	7,5	18		K3NWU18B ...	1	4,1
11	15	15	24	U3/42	K3WU24B ...	1	4,5
15	18,5	18,5	32		K3WU32B ...	1	4,7
22	30	30	50	U3/74	K3WU50B ...	1	7,1
30	37	37	62		K3WU62B ...	1	7,1

Reversing Starter Connector



For Reversing Starter Types

	Type	Pack pcs.	Weight kg/pc.
K3NWU10, K3NWU18	K3NW-VB10	1	0,02
K3WU24, K3WU32	K3W-VB24	1	0,025

¹⁾ Other coil voltages see page 57

Components for Combinations		Mechanical Interlock	Reversing Starter Connector	Auxiliary Contacts Built-in for use on Contactor		Free Space for Aux. Contact Blocks on Contactor		Contactors, Motor-Starter
Left Hand Side Contactor	Right Hand Side Contactor			K1 NO/NC	K2 NO/NC	K1 HN.. or HA..	K2	
K1 Type	K2 Type	Type	Type					
K3-10ND10 + HN01	K3-10ND10 + HN01	LG10889	K3NW-VB10	-	-	3	3	Circuit Breakers
K3-18ND10 + HN01	K3-18ND10 + HN01	LG10889	K3NW-VB10	-	-	3	3	
K3-24A00 + HN10 + HN01	K3-24A00 + HN10 + HN01	LG10889	K3W-VB24	-	-	2	2	
K3-32A00 + HN10 + HN01	K3-32A00 + HN10 + HN01	LG10889	K3W-VB24	-	-	2	2	Manual Motor-Starters
K3-40A00 + HN10 + HN01	K3-40A00 + HN10 + HN01	LG10889	K3W-VB24	-	-	2	2	
K3-50A00 + HN10 + HN01	K3-50A00 + HN10 + HN01	LG10890	-	-	-	2	2	
K3-62A00 + HN10 + HN01	K3-62A00 + HN10 + HN01	LG10890	-	-	-	2	2	Switches
K3-74A00 + HN10 + HN01	K3-74A00 + HN10 + HN01	LG10890	-	-	-	2	2	
K3-10ND10 + HN01	K3-10ND10 + HN01	LG10889	K3NW-VB10	-	-	3	3	
K3-18ND10 + HN01	K3-18ND10 + HN01	LG10889	K3NW-VB10	-	-	3	3	AC-Main Switches
K3-24A00 + HN10 + HN01	K3-24A00 + HN10 + HN01	LG10889	K3W-VB24	-	-	2	2	
K3-32A00 + HN10 + HN01	K3-32A00 + HN10 + HN01	LG10889	K3W-VB24	-	-	2	2	
K3-50A00 + HN10 + HN01	K3-50A00 + HN10 + HN01	LG10890	-	-	-	2	2	DC-Switch Disconnector
K3-62A00 + HN10 + HN01	K3-62A00 + HN10 + HN01	LG10890	-	-	-	2	2	
								Push Buttons
								Representatives, Suppliers

Pole Changing Starters

AC Operated

Ratings			Rated Current	Wired to accept Overload Relay page 120 Type	Type	Coil voltage ¹⁾ 220-240V 50Hz 380-415 50Hz	Pack pcs.	Weight kg/pc.
AC3	380V	400V						
415V	500V	660V	AC3					
kW	kW	kW	400V					
			A					

Open Type



7,5	10	10	18	2 x U3/32 2 x U12/16E K3	K3NPU18 ...	1	1,0
11	15	15	24		K3NPU24 ...	1	1,5
15	18,5	18,5	32	2 x U3/32	K3PU32 ...	1	1,9
22	30	30	50	2 x U3/74	K3PU50 ...	1	3,9
30	37	37	62		K3PU62 ...	1	3,9

Sheet Steel Enclosed, protected to IP54



7,5	10	7,5	18	2x U3/32	K3NPU18B ...	1	1,0
11	15	15	24		K3NPU24B ...	1	1,5
15	18,5	18,5	32		K3PU32B ...	1	1,9

Ordering Example: Pole Changing Starter, open version, rated AC3 at 400V 28A and 15A, control voltage 230V 50Hz
Order Type: K3PU32 230 + U3/32 32 + U3/32 18

Pole Changing Starters for Star-Delta Operation on request

1) Other coil voltages see page 57

Components for Combinations		Star Contactor	Free Space for Aux. Contact Blocks on Contactor		
High Speed	Low Speed		High Speed K1 HN.. or HA..	Low Speed K2	Star K3
K1 Type	K2 Type	K3 Type			
K3-18ND01 + 2 x HN10	K3-18ND01 + HN10	K3-14ND10	2	3	4
K3-24A00 + HN01 + 2 x HN10	K3-24A00 + HN01 + HN10	K3-18ND10	1	2	4
K3-32A00 + HN01 + 2 x HN10	K3-32A00 + HN01 + HN10	K3-24A00 + HN10	1	2	3
K3-50A00 + HN01 + 2 x HN10	K3-50A00 + HN01 + HN10	K3-32A00 + HN10	1	2	3
K3-62A00 + HN01 + 2 x HN10	K3-62A00 + HN01 + HN10	K3-50A00 + HN10	1	2	3
K3-18ND01 + 2 x HN10	K3-18ND01 + HN10	K3-14ND10	2	3	4
K3-24A00 + HN01 + 2 x HN10	K3-24A00 + HN01 + HN10	K3-18ND10	1	2	4
K3-32A00 + HN01 + 2 x HN10	K3-32A00 + HN01 + HN10	K3-24A00 + HN10	1	2	3

Contactor, Motor-Starter

Circuit Breakers

Manual Motor-Starters

Switches

AC-Main Switches

DC-Switch Disconnector

Push Buttons

Representatives, Suppliers

Star-Delta Starters

Data according to IEC 947-4-1, VDE 0660, EN 60947-4-1

Type		K3NY15	K3NY26	K3Y40	K3Y52	K3Y80	K3Y100	K3Y140	K3Y200	K3Y240	K3Y300
Main Contacts											
Rated insulation voltage $U_i^{1)}$	V AC	690	690	690	690	690	690	690	690	690	690
Frequency of operations z AC3, I_e	1/h										
Change-over time max. (Y-step)	s					15 20 (Type K3YL ... 60)					
Utilization category AC3											
Switching of three-phase motors											
Rated operational current I_e	220-230V A	16	30	45	60	85	109	150	205	240	300
	240V A	16	30	45	60	85	109	150	205	240	300
	380-400V A	16	30	45	60	85	109	150	205	240	300
	415-440V A	15	30	45	60	85	109	150	205	240	300
	500V A	15	30	45	60	85	95	150	205	190	240
	660-690V A	13	17	30	36	57	72	103	118	147	180
Rated operational power of three-phase motors	220-230V kW	4	7,5	11	15	22	30	45	55	75	90
	240V kW	5,5	11	15	18,5	22	30	45	55	75	90
	380-400V kW	7,5	15	22	30	45	55	75	110	132	160
	415-440V kW	7,5	15	22	30	45	55	75	110	140	170
	500V kW	7,5	18,5	30	37	55	75	90	132	132	180
	660-690V kW	11	15	22	30	45	55	90	110	132	180
Cable cross-sections											
Line											
solid or stranded	mm ²	1,5 - 6 ²⁾		1,5 - 16		10 - 70 ³⁾		10 - 120		busbar	
flexible	mm ²	1,5 - 4 ²⁾		1,5 - 16		16 - 50 ³⁾		10 - 95		18x5	
flexible with multicore cable end	mm ²	1,5 - 4 ²⁾		1,5 - 16		10 - 35		10 - 95		M8	
Motor											
solid or stranded	mm ²	1,5 - 6		1,5 - 16		4 - 35 ³⁾		10 - 120		busbar	
flexible	mm ²	1,5 - 4		1,5 - 16		6 - 25 ³⁾		10 - 95		18x5	
flexible with multicore cable end	mm ²	1,5 - 4		1,5 - 16		4 - 25		10 - 95		M8	
Power consumption of the combination											
inrush and change-over	VA	55		130		183		560		700	
sealed	VA	20		26		36		10		10	
	W	6		8		14		10		10	

Coil Voltage Ranges and Non Standard Voltages for Star-Delta Starters

K3NY15.. to K3Y100..

Suffix to Star-Delta Starter type	Rated Control Voltage U_s range for 50Hz		range for 60Hz		
e.g. K3Y80 400	min.	max.	min.	max.	
	V	V	V	V	
24	24	24	24	27	
42	42	47	47	52	
110	100	110	110	122	
180	180	210	200	240	
230	220	240	230	264	
400	380	415	400	415	

K3Y140, to K3Y300..

Suffix to Star-Delta Starter type	Rated Control Voltage U_s range for 50Hz		range for 60Hz		for DC
e.g. K3Y300 230	min.	max.	min.	max.	V
	V	V	V	V	
24	24	24	24	24	24
48	48	48	48	48	48
110	110	120	110	120	110
230	220	240	220	240	220
400	380	415	380	415	-

Standard voltages in bold type letters

1) Suitable for: earthed-neutral systems, overvoltage category I to IV, pollution degree 3 (standard-industry): $U_{mp} = 8kV$. Data for other conditions on request.

2) Additional terminals see page 95

3) Maximum cable cross-section with prepared conductor

Reversing Starters

Data according to IEC 947-4-1, VDE 0660, EN 60947-4-1

Type		K3NWU10	K3NWU18	K3WU24	K3WU32	K3WU50	K3WU62	K3WU74
Main Contacts								
Rated insulation voltage $U_i^{(1)}$	V AC	690	690	690	690	690	690	690
Utilization category AC3								
Switching of three-phase motors								
Rated operational current I_e								
220V	A	12	18	23	30	45	63	
230V	A	11,5	18	24	32	50	62	74
240V	A	11	18	24	32	50	62	74
380-400V	A	10	18	24	32	50	62	74
415-440V	A	9	18	23	30	50	62	74
500V	A	9	16	23	30	45	60	74
660-690V	A	6,5	8,5	17	20	31	40	40
Rated operational power of three-phase motors								
220-230V	kW	3	5	6	8,5	12,5	18,5	
240V	kW	3	5	7	9	13,5	19	23
380-400V	kW	4	7,5	11	15	22	30	37
415-440V	kW	4,5	8,5	12	16	24	33	40
500V	kW	5,5	10	15	18,5	30	37	45
660-690V	kW	5,5	10	15	18,5	30	37	45
Cable cross-sections								
Line	solid or stranded	mm ²	0,75 - 6	1,5 - 25		4 - 50		
	flexible	mm ²	1 - 4	2,5 - 16		6 - 35		
	flexible with multicore cable end	mm ²	0,75 - 4	1,5 - 16		6 - 35		
Cables per clamp			1	1		1		
Power consumption of the combination								
inrush and change-over	VA	33 - 45		90 - 115		140 - 185		
sealed	VA	7 - 10		9 - 13		13 - 18		
	W	2,6 - 3		2,7 - 4		5,4 - 7		

Technical Data according to UL508

Main Contacts (cULus)	Type	KNW3-10	KNW3-18	KW3-24	KW3-32	KW3-40
Rated operational power of three-phase motors at 60Hz (3ph)						
110-120V	hp	1½	2	5	5	7½
200V	hp	3	5	7½	10	10
220-240V	hp	3	7½	10	10	15
277V	hp	3	7½	7½	10	15
380-415V	hp	5	10	10	15	20
440-480V	hp	5	10	15	20	25
550-600V	hp	7½	15	20	25	30
Fuse / Short-circuit current	A/kA	30/5	50/5	90/5	125/5	175/5
Rated voltage	V	600	600	600	600	600
Auxiliary Contacts (cULus)		A600	A600	A600	A600	A600
Cable cross-sections						
for main connectors	solid	AWG	18 - 10		16 - 10	
	flexible	AWG	18 - 10		14 - 4	
Cables per clamp			1		1	

1) Suitable for: earthed-neutral systems, overvoltage category I to IV, pollution degree 3 (standard-industry): $U_{imp} = 8kV$. Data for other conditions on request.

Pole Changing Starters

Data according to IEC 947-4-1, VDE 0660, EN 60947-4-1

Type			K3NPU18	K3NPU24	K3PU32	K3PU50	K3PU62
Main Contacts							
Rated insulation voltage U _i ¹⁾	V AC		690	690	690	690	690
Utilization category AC3							
Switching of three-phase motors							
Rated operational current I _e	220V A		18	23	30	45	63
	230V A		17,5	23	30	45	60
	240V A		17	23	30	45	60
	380-400V A		16	23	30	45	60
	415V A		16	23	30	45	60
	440V A		16	23	30	45	60
	500V A		16	23	30	45	55
	660V A		9	17,5	21	33	42
	690V A		8,5	17	20	31	40
Rated operational power of three-phase motors 50-60Hz	220-230V kW		5	6	8,5	12,5	18,5
	240V kW		5	7	9	13,5	19
	380-400V kW		7,5	11	15	22	30
	415-440V kW		8,5	12	16	24	33
	500V kW		10	15	18,5	30	37
	660-690V kW		7,5	15	18,5	30	37
Cable cross-sections							
Line	solid or stranded	mm ²	0,75 - 6	1,5 - 25	4 - 50		
	flexible	mm ²	1 - 4	2,5 - 16	6 - 35		
	flexible with multicore cable end	mm ²	0,75 - 4	1,5 - 16	6 - 35		
Cables per clamp			1	1	1		
Power consumption of the combination							
inrush and change-over	VA		55	128	178		
sealed	VA		20	26	31		
	W		6	8	11		

1) Suitable for: earthed-neutral systems, overvoltage category I to IV, pollution degree 3 (standard-industry): $U_{imp} = 8kV$. Data for other conditions on request.

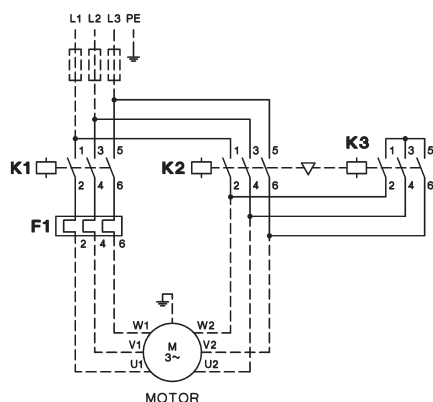
Star-Delta Starters

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.

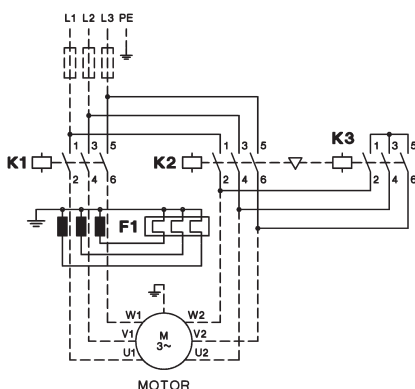
K3NY15 to K3Y100

with thermal overload relay U3/.. or U12/16



K3Y140 to K3Y300

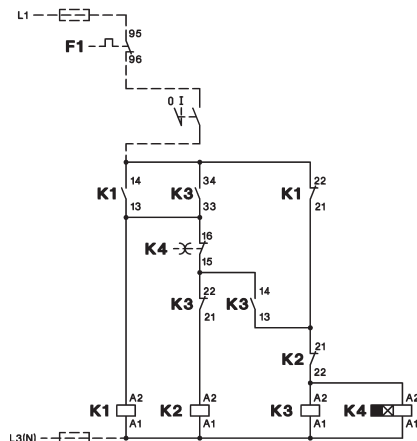
with thermal overload relay U85 or U180



Wiring Diagrams Control Circuit

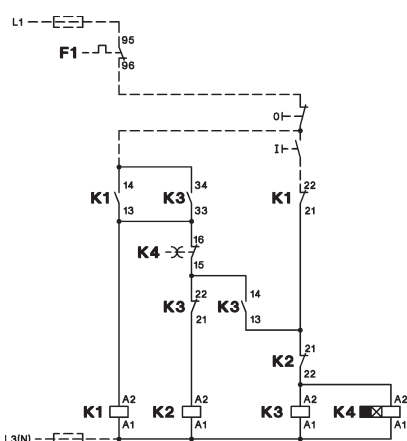
K3NY15 to K3Y52

operating with control switch



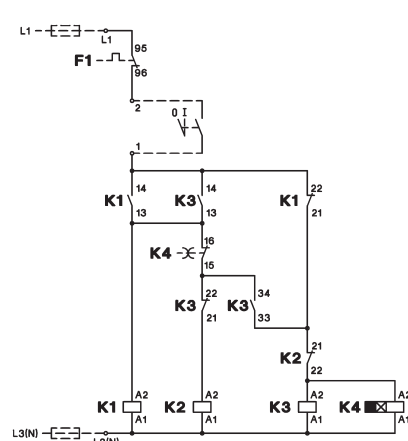
K3NY15 to K3Y52

operating with push buttons



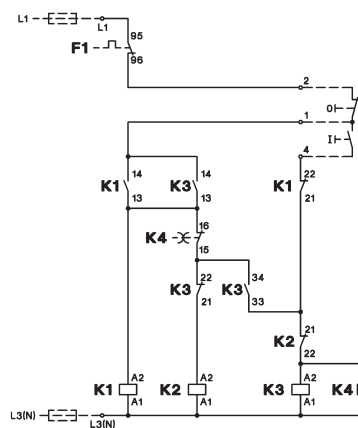
K3Y80 to K3Y200

operating with control switch



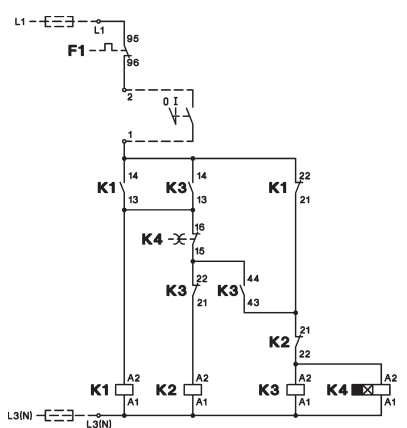
K3Y80 to K3Y200

operating with push buttons



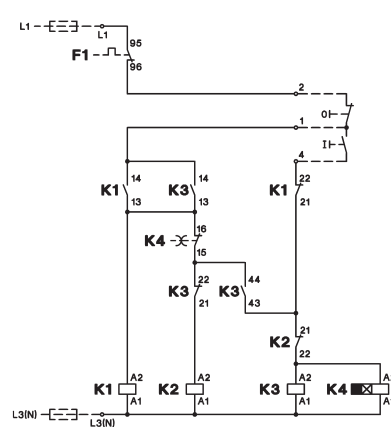
K3Y240 to K3Y300

operating with control switch



K3Y240 to K3Y300

operating with push buttons



Star-Delta Starters

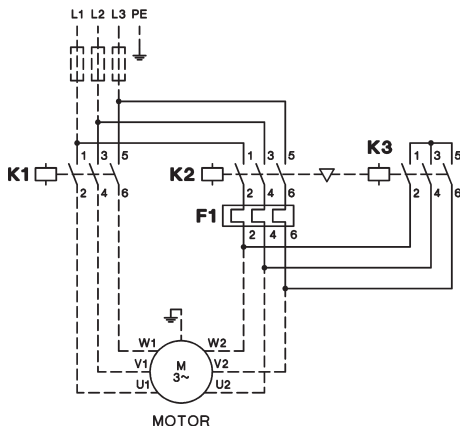
Wiring Diagrams Main Circuit

Terminal markings of contactors and relays according to DIN EN 50012

Connections shown in main and control circuits as broken lines are not included.

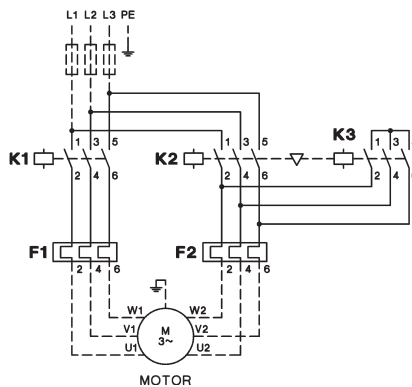
K3YL..

Typical circuit diagram



K3Y.. with 2 Thermal Overload Relays

Typical circuit diagram



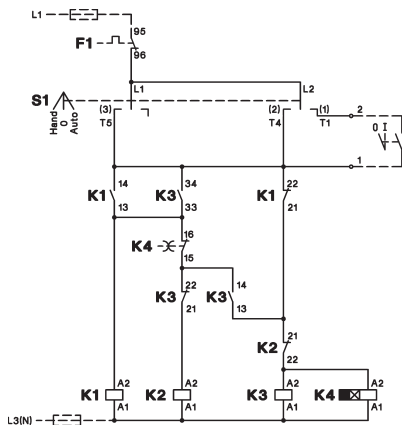
Wiring Diagrams Control Circuit

with selector switch

K3Y..W

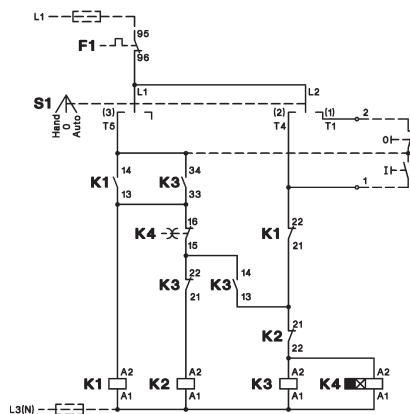
Typical circuit diagram

operating with control switch



Typical circuit diagram

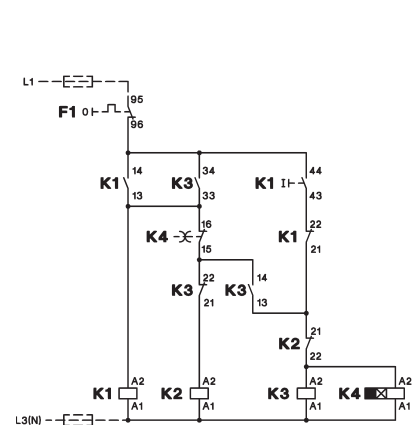
operating with push buttons



with push buttons

K3Y..T

Typical circuit diagram



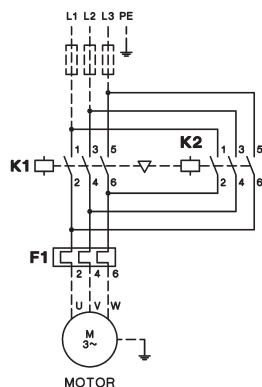
Reversing Contactors

Wiring Diagrams Main Circuit

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

K3NWU10 to K3WU74

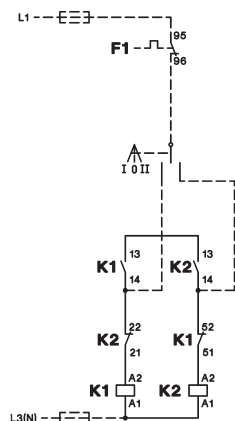
with thermal overload relay U3/32, U3/42 or U3/74



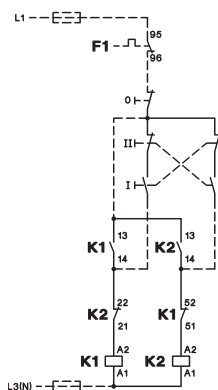
Wiring Diagrams Control Circuit

K3NWU10 to K3WU32

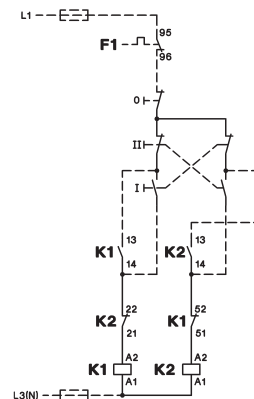
operating with control switch



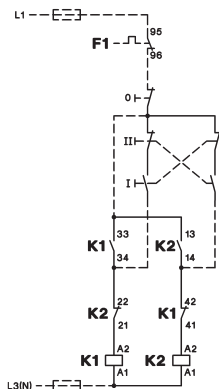
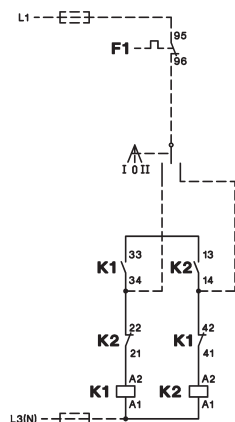
operating with push buttons
Reversing over off-position



Reversing direct



K3WU50, K3WU62, K3WU74

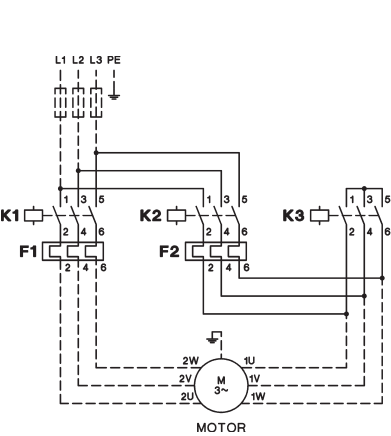


Pole Changing Starters

Wiring Diagrams

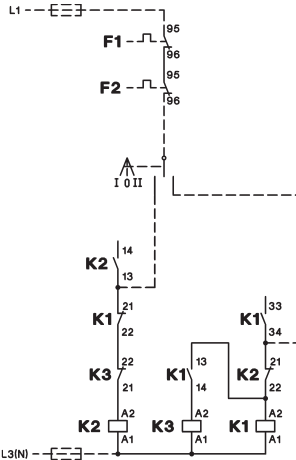
Terminal markings of contactors and relays according to DIN EN 50012
Connections shown in main and control circuits as broken lines are not included.

Main Circuit

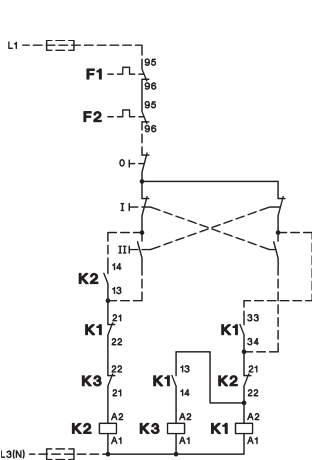


Principal Control Circuit Wiring Diagram

operating with control switch

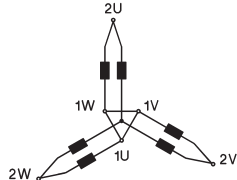
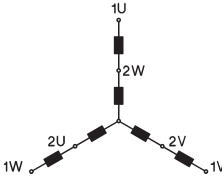
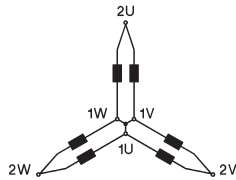
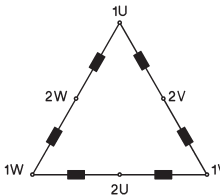


operating with push buttons



	Low speed	High speed
Operation	Delta	Double-Star
Speed relation	1	2
Power relation	1	1,5 - 1,8

	Low speed	High speed
Operation	Star	Double-Star
Speed relation	1	2
Power relation	0,3	1

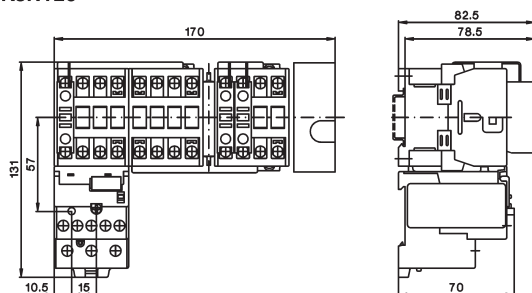


Star-Delta Starters

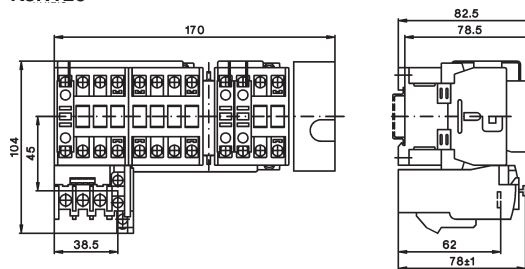
Dimensions

Star-Delta Starters, AC operated, open type

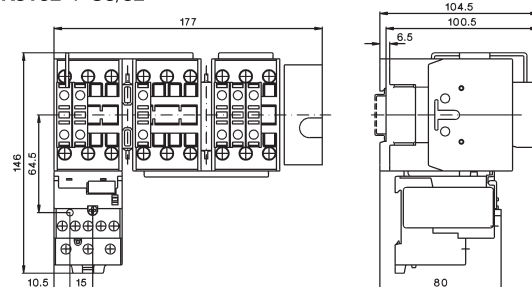
K3NY15 + U3/32
K3NY26



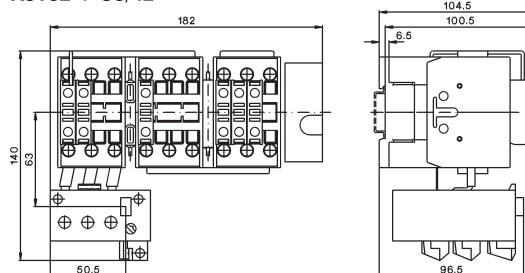
K3NY15 + U12/16E G3
K3NY26



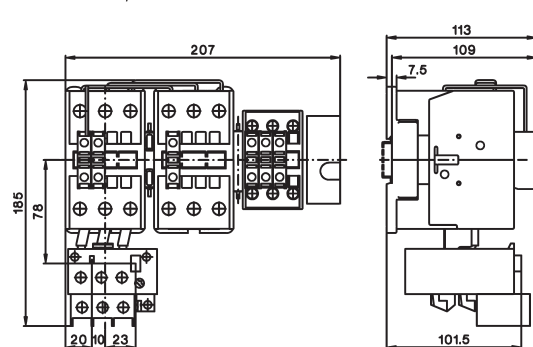
K3Y40 + U3/32
K3Y52 + U3/32



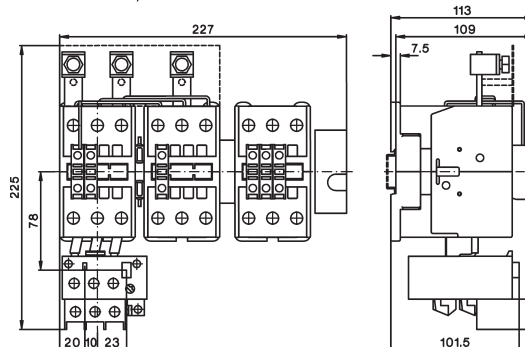
K3Y40 + U3/42
K3Y52 + U3/42



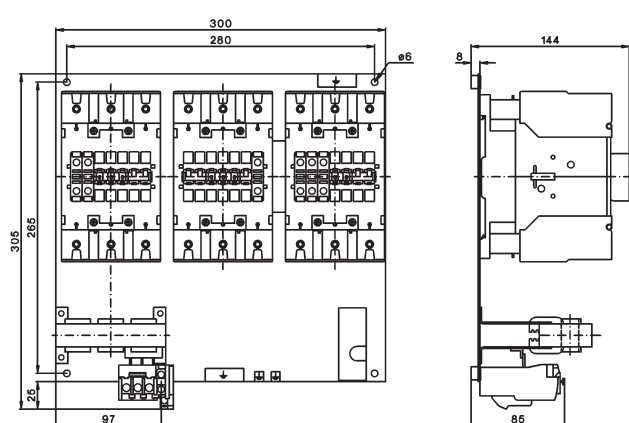
K3Y80 + U3/74



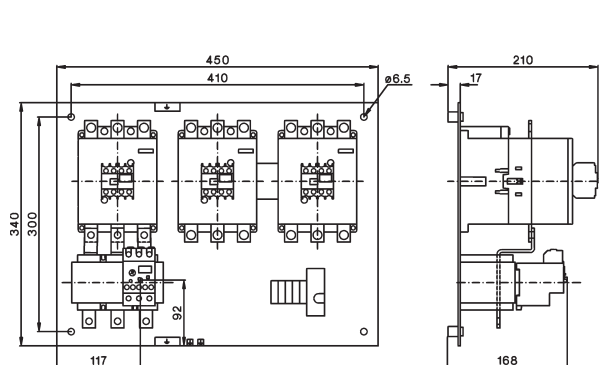
K3Y100 + U3/74



K3Y140 + U85
K3Y200



K3Y240 + U180 + SU180/176
K3Y300

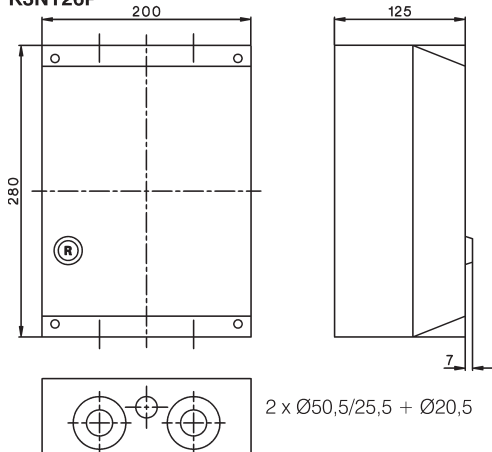


Star-Delta Starters

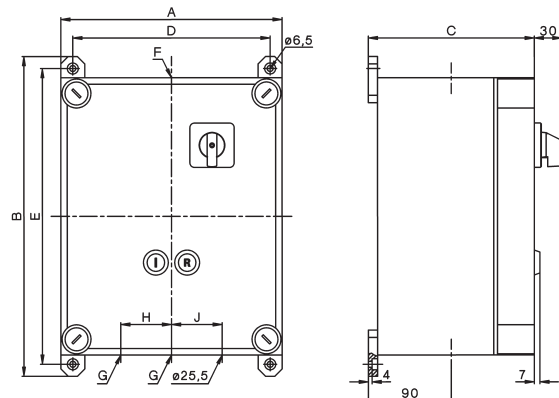
Dimensions

Star-Delta Starters, plastic enclosed, protected to IP65

K3NY26P



K3Y40P to K2Y100P



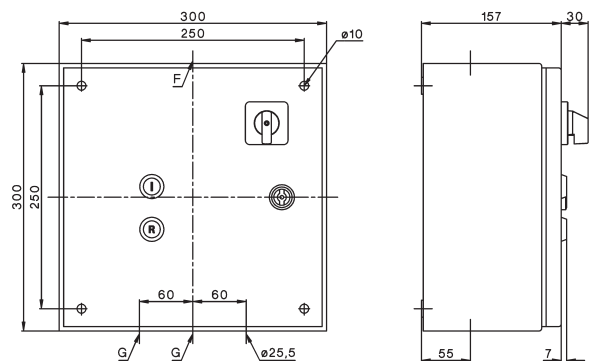
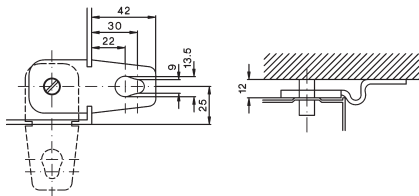
Type	A	B	C	D	E	Ø F	Ø G	H	J	
K3Y40P	300	346	180	272	320	6,5	32,5	32,5	60	60
K3Y52P	300	346	180	272	320	6,5	32,5	32,5	60	60
K3Y80P	300	446	180	272	420	6,5	40,5	40,5	70	70
K3Y100P	300	446	180	272	420	6,5	50,5	40,5	70	70

Star-Delta Starters, sheet steel enclosed, protected to IP54

K3Y26B to K3Y52B

Type	Ø F	Ø G
K3Y26B	25,5	25,5
K3Y40B	32,5	32,5
K3Y52B	32,5	32,5

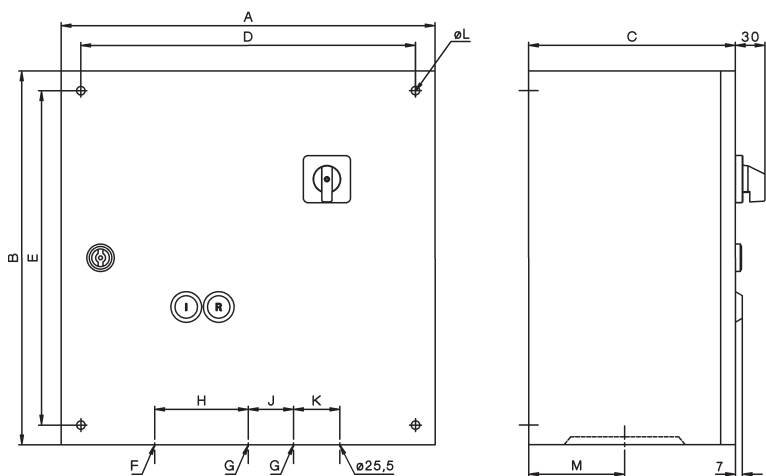
Mounting by included fixing link



K3Y80B to K2Y200B

Type	A	B	C	D	E	L	M
K3Y80B	380	380	210	340	340	8,7	65
K3Y100B	380	380	210	340	340	8,7	65
K3Y140B	380	600	210	560	340	8,7	65
K3Y200B	380	600	210	560	340	8,7	65

Type	Ø F	Ø G	H	J	K
K3Y80B	40,5	40,5	70	70	60
K3Y100B	50,5	40,5	80	70	60
K3Y140B	50,5	50,5	80	80	70
K3Y200B	50,5	50,5	80	80	70

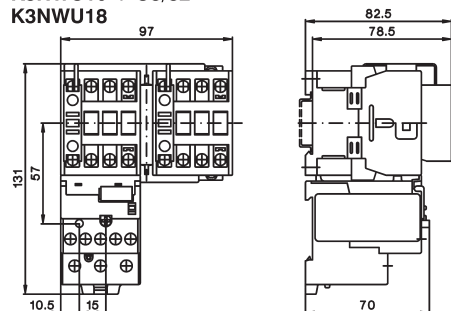


Reversing Contactors

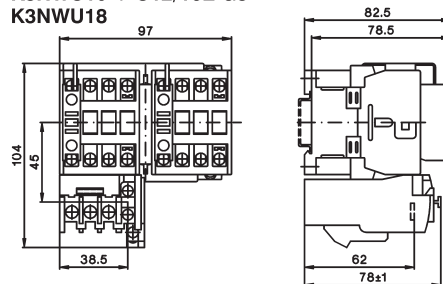
Dimensions

Reversing Starters, AC operated, open type

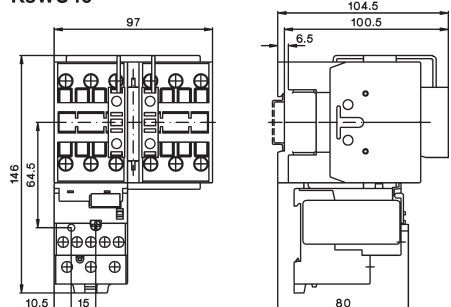
K3NWU10 + U3/32
K3NWU18



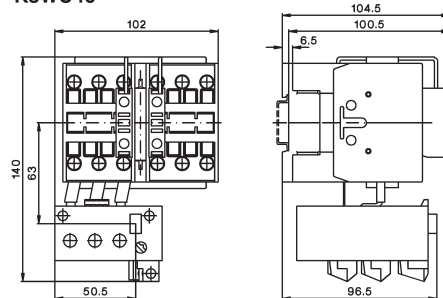
K3NWU10 + U12/16E G3
K3NWU18



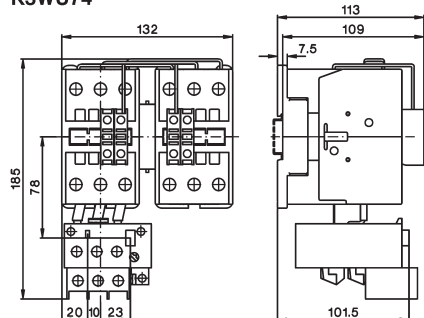
K3WU24 + U3/32
K3WU32
K3WU40



K3WU24 + U3/42
K3WU32
K3WU40



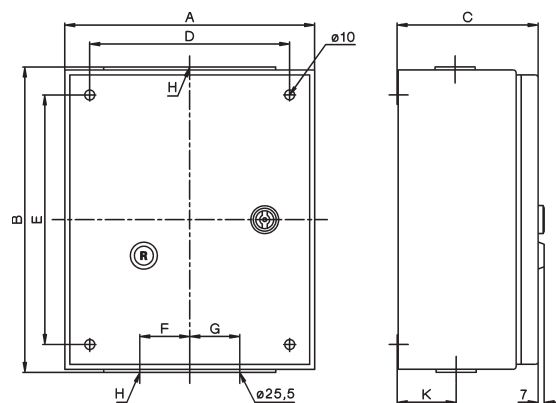
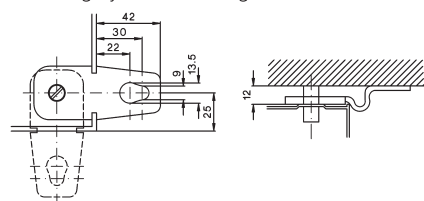
K3WU50 + U3/74
K3WU62
K3WU74



Reversing Contactors, sheet steel enclosed, protected to IP54

Type	A	B	C	D	E	F	G	H	K
K3NWU18B	300	300	150	250	250	30	30	Ø25,5	41
K3WU24B	300	300	150	250	250	30	30	Ø32,5	41
K3WU32B	300	300	150	250	250	30	30	Ø32,5	41
K3WU50B	300	300	150	250	250	40	40	Ø32,5	59
K3WU62B	300	300	150	250	250	40	40	Ø32,5	59

Mounting by included fixing link

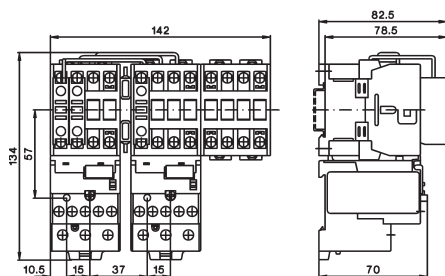


Pole Changing Starters

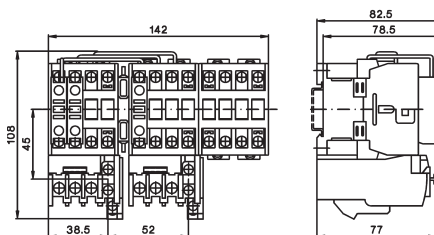
Dimensions

Pole Changing Starters, AC operated, open type

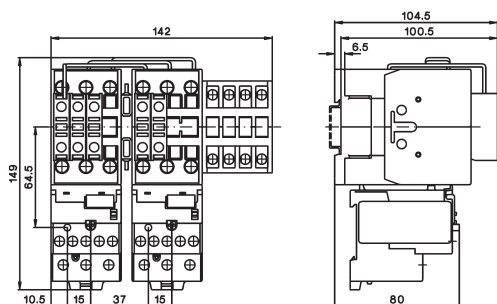
K3NPU18 + 2x U3/32



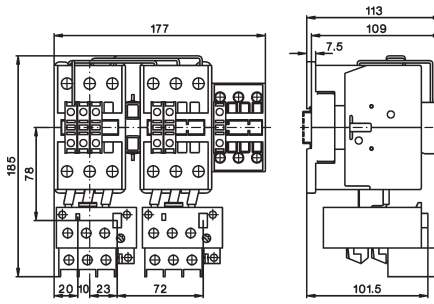
K3NPU18 + 2x U12/16



K3PU24 + 2x U3/32
K3PU32



K3PU50 + 2x U3/74
K3PU62



Pole Changing Starters, sheet steel enclosed, protected to IP54

K3NPU18B to K3PU32B

Type	Ø F	Ø G
K3NPU18B	25,5	25,5
K3PU24B	32,3	32,5
K3PU32B	32,3	32,5

Mounting by included fixing link

