

# 3RA23, 3RA24 Contactor Assemblies

## 3RA24 Contactor Assemblies for Wye-Delta Starting

### 3RA24 complete units, 5.5 ... 22 kW

#### Overview

These 3RA24 contactor assemblies for wye-delta starting are designed for standard applications.

#### Note:

*Contactor assemblies for wye-delta starting in special applications such as very heavy starting or wye-delta starting of special motors must be customized. Help with designing such special applications is available from Technical Assistance.*

The 3RA24 contactor assemblies for wye-delta starting can be ordered as follows:

#### Sizes S00 and S0

- Fully wired and tested, with electrical and mechanical interlock.
- As individual parts for customer assembly.

A dead interval of 50 ms on reversing is already integrated in the function module for wye-delta starting.

There is also a range of accessories (lateral auxiliary switch blocks, etc.) that must be ordered separately.

For overload relays for motor protection see Chapter 5 "Protection Equipment" --> "Overload Relays" --> "3RB3 Solid-State Overload Relays".

The 3RA24 contactor assemblies have screw or spring-type terminals and are suitable for screwing or snapping onto TH 35 standard mounting rails.

With the fully wired and tested 3RA24 contactor assemblies, the auxiliary contacts included in the basic devices are unassigned.

#### Screw terminals

Rated data at AC 50 Hz 400 V			Size			
Power kW	Operational current $I_e$ A	Motor current A		Line/delta contactor	Star contactor	Order No. complete
5.5	12	9.5 ... 13.8	<b>S00-S00-S00</b>	3RT20 15-1	3RT20 15-1	<b>3RA24 15-8XF31-1...</b>
7.5	16	12.1 ... 17		3RT20 17-1	3RT20 15-1	<b>3RA24 16-8XF31-1...</b>
11	25	19 ... 25		3RT20 18-1	3RT20 16-1	<b>3RA24 17-8XF31-1...</b>
11	25	19 ... 25	<b>S0-S0-S0</b>	3RT20 24-1	3RT20 24-1	<b>3RA24 23-8XF32-1...</b>
15	32	24.1 ... 34		3RT20 26-1	3RT20 24-1	<b>3RA24 25-8XF32-1...</b>
18.5	40	34.5 ... 40		3RT20 26-1	3RT20 24-1	<b>3RA24 25-8XF32-1...</b>
22	50	31 ... 43		3RT20 27-1	3RT20 26-1	<b>3RA24 26-8XF32-1...</b>

#### Spring-type terminals

Rated data at AC 50 Hz 400 V			Size			
Power kW	Operational current $I_e$ A	Motor current A		Line/delta contactor	Star contactor	Order No. complete
5.5	12	9.5 ... 13.8	<b>S00-S00-S00</b>	3RT20 15-2	3RT20 15-2	<b>3RA24 15-8XF31-2...</b>
7.5	16	12.1 ... 17		3RT20 17-2	3RT20 15-2	<b>3RA24 16-8XF31-2...</b>
11	25	19 ... 25		3RT20 18-2	3RT20 16-2	<b>3RA24 17-8XF31-2...</b>
11	25	19 ... 25	<b>S0-S0-S0</b>	3RT20 24-2	3RT20 24-2	<b>3RA24 23-8XF32-2...</b>
15	32	24.1 ... 34		3RT20 26-2	3RT20 24-2	<b>3RA24 25-8XF32-2...</b>
18.5	40	34.5 ... 40		3RT20 26-2	3RT20 24-2	<b>3RA24 25-8XF32-2...</b>
25	50	31 ... 43		3RT20 27-2	3RT20 26-2	<b>3RA24 26-8XF32-2...</b>

#### Note:

*The selection of contactor types refers to fused configurations.*

#### Motor protection

Overload relays or thermistor motor protection releases can be used for overload protection.

The overload relay can be either mounted onto the line contactor or separately fitted. It must be set to 0.58 times the rated motor current.

#### Surge suppression

##### Sizes S00 and S0

Surge suppression (varistor) is included in the function modules for wye-delta starting.

#### Function modules for wye-delta starting

The 3RA28 16-0EW20 wye-delta function module (see page 3/44) replaces the complete wiring in the control circuit and can be used in the voltage range from 24 to 240 V AC/DC. It is snapped onto the front of the contactor assembly size S00 or S0.

One function module comprises a complete module kit:

- One 3RA29 12-0 basic module with integrated control logic and time setting,
- And two 3RA29 11-0 coupling modules with related connecting cables.

The scope of supply comprises a complete module kit for one contactor assembly for wye-delta starting size S00 or S0, regardless of the connection method.

# 3RA23, 3RA24 Contactor Assemblies

## 3RA24 Contactor Assemblies for Wye-Delta Starting

**3RA24 complete units, 5.5 ... 22 kW**

### Components for customer assembly

Assembly kits with wiring modules and mechanical connectors are available for contactor assemblies for wye-delta starting. Contactors, overload relays, function modules for wye-delta starting or wye-delta timing relays, auxiliary switches for electrical interlock – if required also feeder terminals and base plates – must be ordered separately.

The wiring kits for sizes S00 and S0 contain the top and bottom main conducting path connections between the line and delta

### Screw terminals

Power kW	Accessories for customer assembly			Overload relay, thermal (trip class CLASS 10)		Overload relay, solid-state (trip class CLASS 10)	
	Function modules for wye-delta starting	Assembly kit B, for single infeed	Star jumper	Setting range	Order No.	Setting range	Order No.
5.5	3RA28 16-0EW20	3RA29 13-2BB1 <sup>1)</sup>	3RT29 16-4BA31	5.5 ... 8	3RU21 16-1HBO	4 ... 16	3RB30 16-1TBO
7.5				7 ... 10	3RU21 16-1JB0		
11				11 ... 16	3RU21 16-4AB0		
11	3RA28 16-0EW20	3RA29 23-2BB1 <sup>2)</sup>	3RT29 26-4BA31	11 ... 16	3RU21 26-4AB0	6 ... 25	3RB30 26-1QB0
15				14 ... 20	3RU21 26-4BB0		
18.5				20 ... 25	3RU21 26-4DB0		
22				20 ... 25	3RU21 26-4DB0		

### Spring-type terminals

Power kW	Accessories for customer assembly			Overload relay, thermal (trip class CLASS 10)		Overload relay, solid-state (trip class CLASS 10)	
	Function modules for wye-delta starting	Assembly kit B, for single infeed	Star jumper	Setting range	Order No.	Setting range	Order No.
5.5	3RA28 16-0EW20	3RA29 13-2BB2 <sup>1)</sup>	3RT29 16-4BA32	5.5 ... 8	3RU21 16-1HC0	4 ... 16	3RB30 16-1TE0
7.5				7 ... 10	3RU21 16-1JC0		
11				11 ... 16	3RU21 16-4AC0		
11	3RA28 16-0EW20	3RA29 23-2BB2 <sup>2)</sup>	3RT29 26-4BA32	11 ... 16	3RU21 26-4AC0	6 ... 25	3RB30 26-1QE0
15				14 ... 20	3RU21 26-4BC0		
18.5				20 ... 25	3RU21 26-4DC0		
22				20 ... 25	3RU21 26-4DC0		

<sup>1)</sup> The assembly kit contains: mechanical interlock, 4 connecting clips; wiring modules on the top (connection between line and delta contactor) and on the bottom (connection between delta and star contactor); star jumper and auxiliary circuit wiring.

<sup>2)</sup> The assembly kit contains: mechanical interlock, 4 connecting clips; wiring modules on the top (connection between line and delta contactor) and on the bottom (connection between delta and star contactor); star jumper.

### Order No. scheme

Digit of the Order No.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
SIRIUS contactor assemblies	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
2nd generation				2												
Device type (e. g. 4 = contactor assembly for wye-delta starting)				4												
Contact size (1 = S00, 2 = S0)							□									
Power dependent on size (e. g. 25 = 15 kW)								□								
Type of overload relay (8X = without)									□	□						
Assembly (F = ready-assembled, E, H = ready-assembled with communication)												□				
Interlock (3 = mechanical and electrical)													□			
Free auxiliary switches (e. g. S00: 1 = 3 NO total, S0: 2 = 3 NO + 3 NC total)																□
Connection type (1 = screw, 2 = spring)																□
Operating range / solenoid coil circuit (e. g. A = AC standard / without)																□
Rated control supply voltage (e. g. K6 = 110/120 V, 50/60 Hz)																□ □
Example	3	R	A	2	4	2	5	-	8	X	F	3	2	-	1	A K 6

### Note:

The Order No. scheme is presented here merely for information purposes and for better understanding of the logic behind the order numbers.

contactors (top) and between the delta and star contactors (bottom).

### Control circuit

Features:

- Time setting range 0.5 to 60 s (3 selectable settings)
- Wide voltage range 24 to 240 V AC/DC
- Dead interval of 50 ms, non-adjustable.

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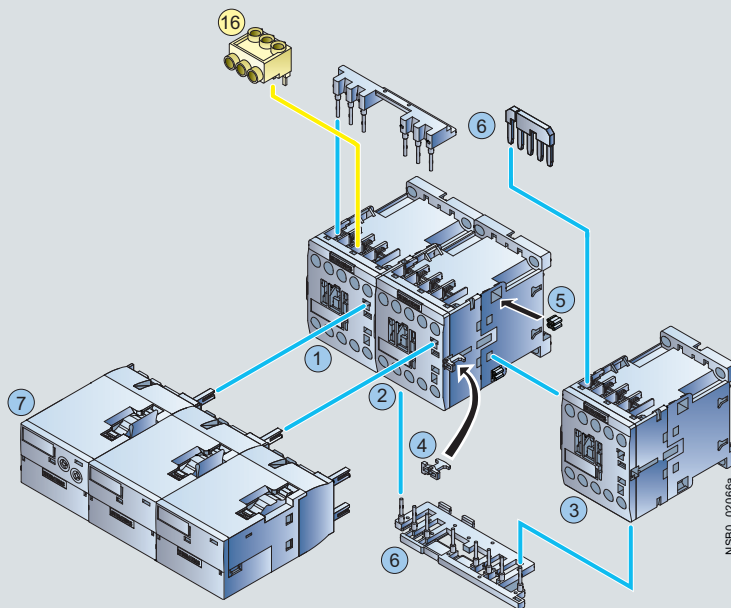
## 3RA24 Contactor Assemblies for Wye-Delta Starting

3RA24 complete units, 5.5 ... 22 kW

### Selection and ordering data

Fully wired and tested contactor assemblies · Size S00-S00-S00 · Up to 11 kW

The figure shows the version with screw terminals



#### Mountable accessories

Individual parts	Order No.	Page
⑯ Three-phase feeder terminal <sup>3)</sup>	3RA29 13-3K	3/44

#### Fully wired and tested contactor assemblies

Individual parts	Order No.			Page
	Q11 <sup>1)</sup>	Q13 <sup>2)</sup>	Q12 <sup>2)</sup>	
①②③ Contactor, 5.5 kW	3RT20 15	3RT20 15	3RT20 15	3/8
①②③ Contactor, 7.5 kW	3RT20 17	3RT20 17	3RT20 15	3/8
①②③ Contactor, 11 kW	3RT20 18	3RT20 18	3RT20 16	3/8
④⑤⑥ Assembly kit comprising	3RA29 13-2BB1			3/44
④ Mechanical interlock				
⑤ 4 connecting clips				
⑥ Wiring modules on the top and bottom for connecting the main current paths				
⑦ Function modules for wye-delta starting	3RA28 16-0EW20			3/44

<sup>1)</sup> Use version with 1 NO.

<sup>2)</sup> Use version with 1 NC.

<sup>3)</sup> Part ⑯ can only be mounted with contactors with screw terminal.

#### Note:

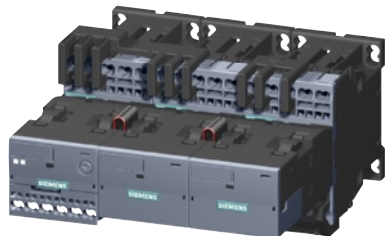
When the function modules for contactor assemblies for wye-delta starting are used, no other auxiliary switches are allowed to be mounted on the basic units.

# 3RA23, 3RA24 Contactor Assemblies

## 3RA24 Contactor Assemblies for Wye-Delta Starting

3RA24 complete units, 5.5 ... 22 kW

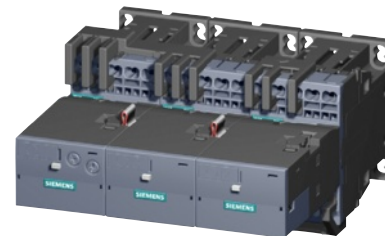
Fully wired and tested contactor assemblies - Size S00-S00-S00 - Up to 11 kW





3RA24 1.-8XE31-2BB4



3RA24 1.-8XF31-1A.0



3RA24 1.-8XF31-2A.0

Rated data AC-3						Rated control supply voltage $U_s$ <sup>1)</sup> at 50/60 Hz	Screw terminals 		Weight approx. kg	Spring-type terminals 		Weight approx. kg
Operational current $I_e$ up to 400 V	Ratings of induction motors at 50 Hz and up to				Order No.		Order No.					
A	230 V	400 V	500 V	690 V	V							
<b>AC operation, 50/60 Hz</b>												
12	3.3	<b>5.5</b>	7.2	9.2	24 AC 110/120 AC 220/240 AC	<b>3RA24 15-8XF31-1AB0</b> <b>3RA24 15-8XF31-1AK6</b> <b>3RA24 15-8XF31-1AP6</b>	0.910 0.850 0.850	<b>3RA24 15-8XF31-2AB0</b> <b>3RA24 15-8XF31-2AK6</b> <b>3RA24 15-8XF31-2AP6</b>	0.910 0.910 0.910			
16	4.7	<b>7.5</b>	10.3	9.2	24 AC 110/120 AC 220/240 AC	<b>3RA24 16-8XF31-1AB0</b> <b>3RA24 16-8XF31-1AK6</b> <b>3RA24 16-8XF31-1AP6</b>	0.910 0.850 0.850	<b>3RA24 16-8XF31-2AB0</b> <b>3RA24 16-8XF31-2AK6</b> <b>3RA24 16-8XF31-2AP6</b>	0.910 0.910 0.910			
25	5.5	<b>11</b>	11	11	24 AC 110/120 AC 220/240 AC	<b>3RA24 17-8XF31-1AB0</b> <b>3RA24 17-8XF31-1AK6</b> <b>3RA24 17-8XF31-1AP6</b>	0.850 0.850 0.850	<b>3RA24 17-8XF31-2AB0</b> <b>3RA24 17-8XF31-2AK6</b> <b>3RA24 17-8XF31-2AP6</b>	0.910 0.910 0.910			
<b>DC operation</b>												
12	3.3	<b>5.5</b>	7.2	9.2	24 DC	<b>3RA24 15-8XF31-1BB4</b>	0.910	<b>3RA24 15-8XF31-2BB4</b>	0.910			
16	4.7	<b>7.5</b>	10.3	9.2	24 DC	<b>3RA24 16-8XF31-1BB4</b>	0.910	<b>3RA24 16-8XF31-2BB4</b>	0.910			
25	5.5	<b>11</b>	11	11	24 DC	<b>3RA24 17-8XF31-1BB4</b>	1.030	<b>3RA24 17-8XF31-2BB4</b>	1.090			
<b>For IO-Link connection</b>												
12	3.3	<b>5.5</b>	7.2	9.2	24 DC	<b>3RA24 15-8XE31-1BB4</b>	1.030	<b>3RA24 15-8XE31-2BB4</b>	1.090			
16	4.7	<b>7.5</b>	10.3	9.2	24 DC	<b>3RA24 16-8XE31-1BB4</b>	1.030	<b>3RA24 16-8XE31-2BB4</b>	1.090			
25	5.5	<b>11</b>	11	11	24 DC	<b>3RA24 17-8XE31-1BB4</b>	1.030	<b>3RA24 17-8XE31-2BB4</b>	1.090			
<b>For AS-Interface connection</b>												
12	3.3	<b>5.5</b>	7.2	9.2	24 DC	<b>3RA24 15-8XH31-1BB4</b>	1.050	<b>3RA24 15-8XH31-2BB4</b>	1.110			
16	4.7	<b>7.5</b>	10.3	9.2	24 DC	<b>3RA24 16-8XH31-1BB4</b>	1.050	<b>3RA24 16-8XH31-2BB4</b>	1.110			
25	5.5	<b>11</b>	11	11	24 DC	<b>3RA24 17-8XH31-1BB4</b>	1.050	<b>3RA24 17-8XH31-2BB4</b>	1.110			

The wye-delta starters listed here are assembled from individual contactors which are UL Listed. The overall assembly Catalog Number is not UL Listed.

For other voltages see page 3/17.

<sup>1)</sup> Coil operating range at 50 Hz: 0.8 ... 1.1 x  $U_s$ ; at 60 Hz: 0.85 ... 1.1 x  $U_s$ .

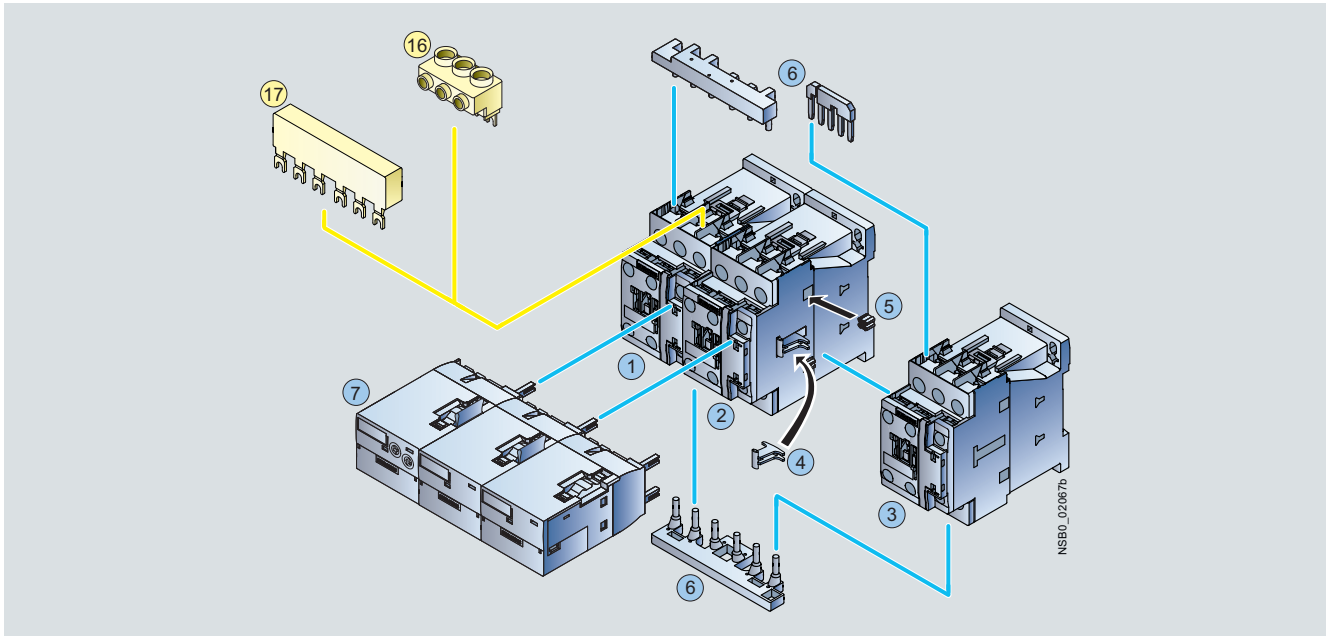
# 3RA23, 3RA24 Contactor Assemblies

## 3RA24 Contactor Assemblies for Wye-Delta Starting

**3RA24 complete units, 5.5 ... 22 kW**

*Fully wired and tested contactor assemblies · Size S0-S0-S0 · Up to 22 kW*

The figure shows the version with screw terminals



### Mountable accessories

Individual parts	Order No.	Page
⑩ Three-phase feeder terminal <sup>1)</sup>	3RV29 25-5AB	3/43
⑪ Three-phase busbar <sup>1)</sup>	3RV19 15-1AB	3/43

### Fully wired and tested contactor assemblies

Individual parts	Order No.			Page
	Q11	Q13	Q12	
①②③ Contactor, 11 kW	3RT20 24	3RT20 24	3RT20 24	3/10
①②③ Contactors, 15/18.5 kW	3RT20 26	3RT20 26	3RT20 24	3/10
①②③ Contactor, 22 kW	3RT20 27	3RT20 27	3RT20 26	3/10
④⑤⑥ Assembly kit	3RA29 23-2BB1			3/43
The assembly kit contains:				
④	Mechanical interlock			
⑤	Connecting clips			
⑥	Wiring modules on the top and bottom for connecting the main current paths			
⑦	Function modules	3RA28 16-0EW20		3/44
for wye-delta starting				

Note:

*When the function modules for contactor assemblies for wye-delta starting are used, no other auxiliary switches are allowed to be mounted on the basic units.*

<sup>1)</sup> The parts ⑩ and ⑪ can only be mounted with contactors with screw terminal.

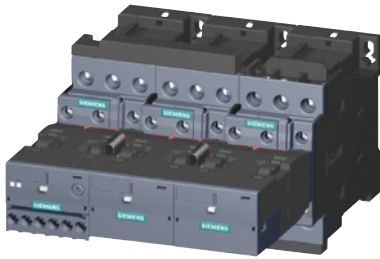
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# 3RA23, 3RA24 Contactor Assemblies

## 3RA24 Contactor Assemblies for Wye-Delta Starting

3RA24 complete units, 5.5 ... 22 kW

Fully wired and tested contactor assemblies · Size S0-S0-S0 · Up to 22 kW



3RA24 2.-8XE32-1BB4



3RA24 2.-8XF32-1A.2



3RA24 2.-8XF32-2A.2

Rated data AC-3		Rated control supply voltage $U_s$ <sup>1)</sup> at 50/60 Hz		Screw terminals		Weight approx.	Spring-type terminals		Weight approx.
Operational current $I_e$ up to	Ratings of induction motors at 50 Hz and up to								
400 V	230 V	400 V	500 V	690 V					
A	kW	kW	kW	kW	V	Order No.	Order No.	Order No.	kg
<b>AC operation, 50/60 Hz</b>									
25	7.1	11	15.6	19	24 AC 110/220 AC 220/240 AC	3RA24 23-8XF32-1AC2 3RA24 23-8XF32-1AK6 3RA24 23-8XF32-1AP6	1.370 1.370 1.370	3RA24 23-8XF32-2AC2 3RA24 23-8XF32-2AK6 3RA24 23-8XF32-2AP6	1.530 1.530 1.530
32 / 40	11.4	15 / 18.5	19	19	24 AC 110/220 AC 220/240 AC	3RA24 25-8XF32-1AC2 3RA24 25-8XF32-1AK6 3RA24 25-8XF32-1AP6	1.370 1.370 1.370	3RA24 25-8XF32-2AC2 3RA24 25-8XF32-2AK6 3RA24 25-8XF32-2AP6	1.530 1.530 1.530
50	--	22	19	19	24 AC 110/220 AC 220/240 AC	3RA24 26-8XF32-1AC2 3RA24 26-8XF32-1AK6 3RA24 26-8XF32-1AP6	1.390 1.390 1.390	3RA24 26-8XF32-2AC2 3RA24 26-8XF32-2AK6 3RA24 26-8XF32-2AP6	1.550 1.550 1.550
<b>DC operation</b>									
25	7.1	11	15.6	19	24 DC	3RA24 23-8XF32-1BB4	1.940	3RA24 23-8XF32-2BB4	2.100
32 / 40	11.4	15 / 18.5	19	19	24 DC	3RA24 25-8XF32-1BB4	1.940	3RA24 25-8XF32-2BB4	2.100
50	--	22	19	19	24 DC	3RA24 26-8XF32-1BB4	1.960	3RA24 26-8XF32-2BB4	2.120
<b>For IO-Link connection</b>									
25	7.1	11	15.6	19	24 DC	3RA24 23-8XE32-1BB4	1.940	3RA24 23-8XE32-2BB4	2.100
32 / 40	11.4	15 / 18.5	19	19	24 DC	3RA24 25-8XE32-1BB4	1.940	3RA24 25-8XE32-2BB4	2.100
50	--	22	19	19	24 DC	3RA24 26-8XE32-1BB4	1.960	3RA24 26-8XE32-2BB4	2.120
<b>For AS-Interface connection</b>									
25	7.1	11	15.6	19	24 DC	3RA24 23-8XH32-1BB4	1.960	3RA24 23-8XH32-2BB4	2.120
32 / 40	11.4	15 / 18.5	19	19	24 DC	3RA24 25-8XH32-1BB4	1.960	3RA24 25-8XH32-2BB4	2.120
50	--	22	19	19	24 DC	3RA24 26-8XH32-1BB4	1.980	3RA24 26-8XH32-2BB4	2.140

The wye-delta starters listed here are assembled from individual contactors which are UL Listed. The overall assembly Catalog Number is not UL Listed.

<sup>1)</sup> Coil operating range at 50 Hz: 0.8 ... 1.1 x  $U_s$ ; at 60 Hz: 0.85 ... 1.1 x  $U_s$ .

# 3RA23, 3RA24 Contactor Assemblies

## 3RA24 Contactor Assemblies for Wye-Delta Starting

### 3RA24 complete units, 5.5 ... 22 kW

#### More information

Starter	Type		3RA24 15	3RA24 16	3RA24 17	3RA24 23	3RA24 25	3RA24 26
	Sizes <b>S..-S..-S..</b>		<b>00-00-00</b>	<b>00-00-00</b>	<b>00-00-00</b>	<b>0-0-0</b>	<b>0-0-0</b>	<b>0-0-0</b>
	Width	mm	<b>45</b>	<b>45</b>	<b>45</b>	<b>45</b>	<b>45</b>	<b>45</b>

All technical specifications not mentioned in the table below are identical to those of the individual 3RT contactors and 3RU overload relays

<b>Mechanical endurance</b>	Operating cycles		3 million					
<b>Short-circuit protection without overload relay</b>			1)					
Maximum rated current of the fuse								
<b>Main circuit</b>								
Fuse links, gG operational class: LV HRC 3NA, DIAZED 5SB, NEOZED 5SE								
Single or double infeed								
acc. to IEC 60947-4-1/EN 60947-4-1	• Type of coordination "1" • Type of coordination "2"	A A	35 20	35 20	63 25	63 25	100 35	125 63
<b>Control circuit</b>								
Fuse links, gG operational class: DIAZED 5SB, NEOZED 5SE (short-circuit current $I_k \leq 1$ kA)		A A	10 6 <sup>2)</sup> , if the auxiliary contact of the overload relay is connected in the contactor coil circuit					
Miniature circuit breaker with C characteristic		A A	10 6 <sup>2)</sup> , if the auxiliary contact of the overload relay is connected in the contactor coil circuit					
<b>Size of individual contactors</b>	• Q11 line contactor • Q13 delta contactor • Q12 star contactor	Type 3RT Type 3RT Type 3RT	20 15 20 15 20 15	20 17 20 17 20 15	20 18 20 18 20 16	20 24 20 24 20 24	20 26 20 26 20 24	20 27 20 27 20 26
<b>Unassigned auxiliary contacts of the individual contactors</b>			3)					
<b>Current-carrying capacity with reversing time up to 10 s</b>								
• Rated operational current $I_e$	At 400 V 500 V 690 V	A A A	12 8.7 6.9	17 11.3 9	25 20.8 20.8	25 20.8 20.8	40 31.2 22.5	65 55.4 53.7
• Rated power for induction motors with 50 and 60 Hz	At 230 V 400 V 500 V 690 V 1000 V	kW kW kW kW kW	3.3 5.8 5.3 5.8 --	4.7 8.2 6.9 7.5 --	7.2 12.5 13 18 --	7.2 12.5 13 18 --	12 21 20.5 20.4 --	20.4 35 38 51 --
• <b>Switching frequency</b> with overload relay		h <sup>-1</sup>	15	15	15	15	15	15
<b>Current-carrying capacity with reversing time up to 15 s</b>								
• Rated operational current $I_e$	At 400 V 500 V 690 V	A A A	12 8.7 6.9	17 11.3 9	25 20.8 20.8	25 20.8 20.8	31 22.5 22.5	44 44 44
• Rated power for induction motors with 50 and 60 Hz	At 230 V 400 V 500 V 690 V 1000 V	kW kW kW kW kW	3.3 5.8 5.3 5.8 --	4.7 8.2 6.9 7.5 --	7.2 12.5 13 18 --	7.2 12.5 13 18 --	9.4 16.3 20.4 20.4 --	13.8 24 30 42 --
• <b>Switching frequency</b> with overload relay		h <sup>-1</sup>	15	15	15	15	15	15
<b>Current-carrying capacity with reversing time up to 20 s</b>								
• Rated operational current $I_e$	At 400 V 500 V 690 V	A A A	12 8.7 6.9	17 11.3 9	25 20.8 20.8	25 20.8 20.8	28 22.5 22.5	39 39 39
• Rated power for induction motors with 50 and 60 Hz	At 230 V 400 V 500 V 690 V 1000 V	kW kW kW kW kW	3.3 5.8 5.3 5.8 --	4.7 8.2 6.9 7.5 --	7.2 12.5 13 18 --	7.2 12.5 13 18 --	8.5 14.7 18.4 20.4 --	12.2 21.3 26.7 37 --
• <b>Switching frequency</b> with overload relay		h <sup>-1</sup>	15	15	15	15	15	15

1) For short-circuit protection with overload relays see "Protection Equipment" --> "Overload Relays" --> "3RB3 Solid-State Overload Relays".

2) Up to  $I_k < 0.5$  kA;  $\leq 260$  V.

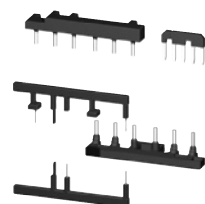
3) For circuit diagrams of the control circuit see the note on technical information on page 3/1.

# 3RA23, 3RA24 Contactor Assemblies

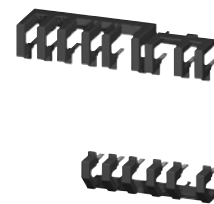
## 3RA24 Contactor Assemblies for Wye-Delta Starting

Components for customer assembly

## Selection and ordering data



3RA29 23-2BB1



3RA29 23-2BB2

For contactors	Size	Version	Screw terminals		Weight approx.	Spring-type terminals		Weight approx.
Type			Order No.		kg	Order No.		kg

### Assembly kits<sup>1)</sup> for making 3-pole contactor assemblies

3RT20 1	<b>S00</b>	The assembly kit contains: mechanical interlock; 4 connecting clips, star jumper, wiring modules on the top and bottom  • For main, auxiliary and control circuits	<b>3RA29 13-2BB1</b>		0.001	<b>3RA29 13-2BB2</b>		0.001	
3RT20 2	<b>S0</b>	The assembly kit contains: mechanical interlock; 4 connecting clips, star jumper, wiring modules on the top and bottom  • For main, auxiliary and control circuits  • Only for main circuit <sup>2)</sup>	<b>3RA29 23-2BB1</b>		0.001	--		<b>3RA29 23-2BB2</b>	0.001



3RV29 25-5AB



3RV19 15-1AB



3RT19 16-4BA31



3RT29 16-4BA32

### Three-phase feeder terminals

3RT20 1	<b>S00</b>	Feeder terminal block for the line contactor for large conductor cross-sections  • Conductor cross-section 10 AWG	<b>3RA29 13-3K</b>		0.001	--		
3RT20 2	<b>S0</b>	• Conductor cross-section 6 AWG	<b>3RV29 25-5AB</b>		0.043	--		

### Three-phase busbars

3RT20 2	<b>S0</b>	Bridging phase-by-phase of all input terminals of the line contactor (Q11) and the delta contactor (Q13)	<b>3RV19 15-1AB</b>		0.044	--		
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### Links for paralleling, 3-pole (star jumpers)

3RT20 1	<b>S00</b>	Without connection terminal (the links for paralleling can be reduced by one pole)	<b>3RT19 16-4BA31</b>		0.010	<b>3RT29 16-4BA32</b>		0.010
3RT20 2	<b>S0</b>		<b>3RT19 26-4BA31</b>		0.010	<b>3RT29 26-4BA32</b>		0.020

<sup>1)</sup> When using the function modules for wye-delta starting, the wiring modules for the auxiliary current are not required.

<sup>2)</sup> Version in size S0 with spring-type terminals:  
Only the wiring modules for the main circuit are included.  
No connectors are included for the auxiliary and control circuit.

# 3RA23, 3RA24 Contactor Assemblies

## 3RA24 Contactor Assemblies for Wye-Delta Starting

### Components for customer assembly



3RA28 16-0EW20



3RA27 12-1CA00



3RA27 11-2CA00

For contactors	Size	Version		Weight approx.		Weight approx.		
Type			<b>Screw terminals</b>	⊕	kg	<b>Spring-type terminals</b>	⊕	kg
			Order No.			Order No.		
<b>Function modules for wye-delta starting</b>								
3RT20 1, 3RT20 2	<b>S00, S0</b>	Comprising one basic module and two coupling modules. Rated control supply voltage 24 ... 240 V AC/DC Time setting range 0.5 ... 60 s (10, 30, 60 s selectable)	<b>3RA28 16-0EW20</b>		0.170	<b>3RA28 16-0EW20</b>		0.170
<b>Accessories for 3RA28 function modules</b>								
3RT20 1, 3RT20 2	<b>S00, S0</b>	<b>Sealable covers</b>	<b>3RA29 10-0</b>		0.002	<b>3RA29 10-0</b>		0.002
<b>Function modules for contactor assemblies for wye-delta starting for connection to the control system</b>								
3RT20 1, 3RT20 2	<b>S00, S0</b>	<b>IO-Link connection</b> , comprising one basic module and two coupling modules, plus an additional module connector for assembling an IO-Link group	<b>3RA27 11-1CA00</b>		0.190	<b>3RA27 11-2CA00</b>		0.185
3RT20 1, 3RT20 2	<b>S00, S0</b>	<b>AS-Interface connection</b> , comprising one basic module and two coupling modules	<b>3RA27 12-1CA00</b>		0.185	<b>3RA27 12-2CA00</b>		0.185
<b>Accessories for 3RA27 function modules</b>								
<b>Module connectors</b>								
3RT20 1, 3RT20 2	<b>S00, S0</b>	14-pole, 8 cm long • For size jump S00-S0 + 1 space	<b>3RA27 11-0EE02</b>		0.001	<b>3RA27 11-0EE02</b>		0.001
3RT20 1, 3RT20 2	<b>S00, S0</b>	14-pole, 21 cm long • For diverse space combinations	<b>3RA27 11-0EE03</b>		0.001	<b>3RA27 11-0EE03</b>		0.001
3RT20 1, 3RT20 2	<b>S00, S0</b>	10-pole, 8 cm long • For separate auxiliary voltage supply within an IO-Link group	<b>3RA27 11-0EE04</b>		0.001	<b>3RA27 11-0EE04</b>		0.001
3RT20 1, 3RT20 2	<b>S00, S0</b>	<b>Sealable covers</b>	<b>3RA29 10-0</b>		0.002	<b>3RA29 10-0</b>		0.002

For operator panel for IO-Link see page 3/84.

#### Notes:

When the function modules for contactor assemblies for wye-delta starting are used, no other auxiliary switches are allowed to be mounted on the basic units.

Can only be used on contactors with communication interface. See pages 3/12 and 3/15.