

3RT20 coupling contactors (interface),  
for switching motors, 3-pole, 3 ... 20 HP

## Application

### DC operation

IEC 60947, EN 60947.

The 3RT20 coupling contactors for switching motors are tailored to the special requirements of working with electronic controls.

The 3RT20 1 coupling contactors cannot be expanded with auxiliary switch blocks.

Coupling contactors have a low power consumption and an extended solenoid coil operating range.

Depending on the version, the solenoid coils are supplied either without overvoltage damping (3RT20 1.-1HB4. and 3RT20 1.-.MB4.-0KT0) or with a diode, suppressor diode or varistor connected as standard.

## Selection and ordering data

### DC operation

#### Low power consumption

#### Extended operating range of the solenoid coil



3RT20 1.-1.B4.



3RT20 1.-2.B4.

Rated data AC-3		Auxiliary contacts		Screw terminals		Spring-type terminals	
Operational current $I_e$ up to	Rating of induction motors at 60 Hz and	Ident. No.	Version	Order No.	Weight approx.	Order No.	Weight approx.
A	HP				kg		kg

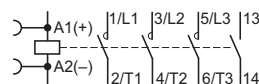
For screw and snap-on mounting onto TH 35 standard mounting rail

### Size S00

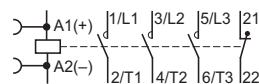
#### Diode, varistor or RC element, attachable

Terminal designations according to EN 50012 (no auxiliary switch blocks can be attached)

- 1 NO, identification number **10E**



- 1 NC, identification number **01**



Rated control supply voltage  $U_s = 24$  V DC, coil operating range **0.7 to 1.25** x  $U_s$   
Power consumption of the coils **2.8 W** at 24 V

Rated current	HP	Ident. No.	Version	Order No.	Weight approx.	Order No.	Weight approx.
7	3	10E	1 --	3RT20 15-1HB41	0.280	3RT20 15-2HB41	0.300
		01	-- 1	3RT20 15-1HB42	0.280	3RT20 15-2HB42	0.300
9	5	10E	1 --	3RT20 16-1HB41	0.280	3RT20 16-2HB41	0.300
		01	-- 1	3RT20 16-1HB42	0.280	3RT20 16-2HB42	0.300
12	7.5	10E	1 --	3RT20 17-1HB41	0.280	3RT20 17-2HB41	0.300
		01	-- 1	3RT20 17-1HB42	0.280	3RT20 17-2HB42	0.300

Rated control supply voltage  $U_s = 24$  V DC, operating range **0.85 to 1.85** x  $U_s$   
Power consumption of the coils **1.6 W** at 24 V

Rated current	HP	Ident. No.	Version	Order No.	Weight approx.	Order No.	Weight approx.
7	3	10E	1 --	3RT20 15-1MB41-0KT0	0.280	3RT20 15-2MB41-0KT0	0.300
		01	-- 1	3RT20 15-1MB42-0KT0	0.280	3RT20 15-2MB42-0KT0	0.300
9	5	10E	1 --	3RT20 16-1MB41-0KT0	0.280	3RT20 16-2MB41-0KT0	0.300
		01	-- 1	3RT20 16-1MB42-0KT0	0.280	3RT20 16-2MB42-0KT0	0.300
12	7.5	10E	1 --	3RT20 17-1MB41-0KT0	0.280	3RT20 17-2MB41-0KT0	0.300
		01	-- 1	3RT20 17-1MB42-0KT0	0.280	3RT20 17-2MB42-0KT0	0.300

For surge suppressors see page 3/100.

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- DC operation
- Low power consumption
- Extended operating range of the solenoid coil
- Integrated coil circuit



3RT20 1.-1.B4.



3RT20 1.-2.B4.

Rated data AC-3		Auxiliary contacts		Screw terminals	Weight approx.	Spring-type terminals	Weight approx.
Operational current $I_e$ up to	Rating of induction motors at 60 Hz and	Ident. No.	Version	Order No.		Order No.	
400 V	<b>460 V</b>		 		kg		kg
A	<b>HP</b>		NO NC				

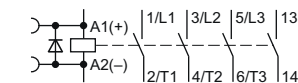
**For screw and snap-on mounting onto TH 35 standard mounting rail**

Size S00

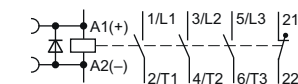
**With integrated coil circuit (diode)**

Terminal designations according to EN 50012 (no auxiliary switch blocks can be attached)

- 1 NO, identification number **10E**



- 1 NC, identification number **01**



Rated control supply voltage  $U_s = 24$  V DC, coil operating range **0.7 to 1.25** x  $U_s$   
Power consumption of the coils **2.8 W** at 24 V

Rated current	HP	NO (10E)	NC (01)	Order No.	Weight approx.	Order No.	Weight approx.
7	3	10E	1 --	3RT20 15-1JB41	0.280	3RT20 15-2JB41	0.300
		01	-- 1	3RT20 15-1JB42	0.280	3RT20 15-2JB42	0.300
9	5	10E	1 --	3RT20 16-1JB41	0.280	3RT20 16-2JB41	0.300
		01	-- 1	3RT20 16-1JB42	0.280	3RT20 16-2JB42	0.300
12	7.5	10E	1 --	3RT20 17-1JB41	0.280	3RT20 17-2JB41	0.300
		01	-- 1	3RT20 17-1JB42	0.280	3RT20 17-2JB42	0.300

Rated control supply voltage  $U_s = 24$  V DC, operating range **0.85 to 1.85** x  $U_s$   
Power consumption of the coils **1.6 W** at 24 V

Rated current	HP	NO (10E)	NC (01)	Order No.	Weight approx.	Order No.	Weight approx.
7	3	10E	1 --	3RT20 15-1VB41	0.280	3RT20 15-2VB41	0.300
		01	-- 1	3RT20 15-1VB42	0.280	3RT20 15-2VB42	0.300
9	5	10E	1 --	3RT20 16-1VB41	0.280	3RT20 16-2VB41	0.300
		01	-- 1	3RT20 16-1VB42	0.280	3RT20 16-2VB42	0.300
12	7.5	10E	1 --	3RT20 17-1VB41	0.280	3RT20 17-2VB41	0.300
		01	-- 1	3RT20 17-1VB42	0.280	3RT20 17-2VB42	0.300

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- DC operation
- Low power consumption
- Extended operating range of the solenoid coil
- Integrated coil circuit



3RT20 1.-1.B4.



3RT20 1.-2.B4.

Rated data AC-3		Auxiliary contacts		Screw terminals	Weight approx.	Spring-type terminals	Weight approx.
Operational current $I_e$ up to	Rating of induction motors at 60 Hz and	Ident. No.	Version				
400 V	<b>460 V</b>						
A	<b>HP</b>		NO NC		kg		kg

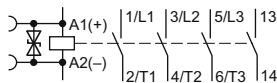
**For screw and snap-on mounting onto TH 35 standard mounting rail**

Size S00

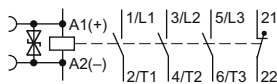
**With integrated coil circuit (suppressor diode)**

Terminal designations according to EN 50012 (no auxiliary switch blocks can be attached)

- 1 NO, identification number **10E**



- 1 NC, identification number **01**



Rated control supply voltage  $U_s = 24$  V DC, coil operating range **0.7 to 1.25** x  $U_s$   
 Power consumption of the coils **2.8 W** at 24 V

Rated current	HP	Ident. No.	Version	Order No.	Weight approx.	Order No.	Weight approx.
7	3	10E	1 --	3RT20 15-1KB41	0.280	3RT20 15-2KB41	0.300
		01	-- 1	3RT20 15-1KB42	0.280	3RT20 15-2KB42	0.300
9	5	10E	1 --	3RT20 16-1KB41	0.280	3RT20 16-2KB41	0.300
		01	-- 1	3RT20 16-1KB42	0.280	3RT20 16-2KB42	0.300
12	7.5	10E	1 --	3RT20 17-1KB41	0.280	3RT20 17-2KB41	0.300
		01	-- 1	3RT20 17-1KB42	0.280	3RT20 17-2KB42	0.300

Rated control supply voltage  $U_s = 24$  V DC, operating range **0.85 to 1.85** x  $U_s$   
 Power consumption of the coils **1.6 W** at 24 V

Rated current	HP	Ident. No.	Version	Order No.	Weight approx.	Order No.	Weight approx.
7	3	10E	1 --	3RT20 15-1SB41	0.280	3RT20 15-2SB41	0.300
		01	-- 1	3RT20 15-1SB42	0.280	3RT20 15-2SB42	0.300
9	5	10E	1 --	3RT20 16-1SB41	0.280	3RT20 16-2SB41	0.300
		01	-- 1	3RT20 16-1SB42	0.280	3RT20 16-2SB42	0.300
12	7.5	10E	1 --	3RT20 17-1SB41	0.280	3RT20 17-2SB41	0.300
		01	-- 1	3RT20 17-1SB42	0.280	3RT20 17-2SB42	0.300

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- DC operation
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- Extended operating range of the solenoid coil
- Integrated coil circuit



3RT20 2.-1KB40



3RT20 2.-2KB40

Rated data		Auxiliary contacts		Screw terminals		Spring-type terminals	
AC-3		Ident. No.	Version	Order No.	Weight approx.	Order No.	Weight approx.
Operational current $I_e$ up to	Rating of induction motors at 60 Hz and						
400 V	<b>460 V</b>						
A	<b>HP</b>	NO	NC		kg		kg

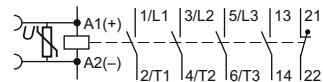
**For screw and snap-on mounting onto TH 35 standard mounting rail**

**Size S0**

**With integrated coil circuit (varistor)**

Terminal designations according to EN 50012 (no auxiliary switch blocks can be attached)

1 NO + 1 NC, identification number **11E**



Rated control supply voltage  $U_s = 24$  V DC, operating range **0.7 to 1.25 x  $U_s$**

Power consumption of the coils **4.5 W** at 24 V

12	<b>7.5</b>	<b>11E</b>	1	1	<b>3RT20 24-1KB40</b>	0.580	<b>3RT20 24-2KB40</b>	0.600
16	<b>10</b>	<b>11E</b>	1	1	<b>3RT20 25-1KB40</b>	0.580	<b>3RT20 25-2KB40</b>	0.600
25	<b>15</b>	<b>11E</b>	1	1	<b>3RT20 26-1KB40</b>	0.580	<b>3RT20 26-2KB40</b>	0.600
32	<b>20</b>	<b>11E</b>	1	1	<b>3RT20 27-1KB40</b>	0.600	<b>3RT20 27-2KB40</b>	0.600





For accessories, see page 3/97.




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## More information

All technical specifications not mentioned in the table below are identical to those of the 3RT20 contactors for switching motors (see 3/18).

Contactors	Type		3RT20 1.-.HB4.	3RT20 1.-.JB4.	3RT20 1.-.KB4.	3RT20 2.-.KB4.
	Size		S00	S00	S00	S0
	Width	mm	45	45	45	45
<b>General data</b>						
<b>Mechanical endurance</b>		Operating cycles	30 million			10 million
<b>Protective separation</b> between the coil and the main contacts acc. to EN 60947-1, Appendix N		V	400			
<b>Control</b>						
<b>Solenoid coil operating range</b>			0.7 ... 1.25 x $U_s$			
<b>Power consumption of the solenoid coil</b> (for cold coil) Closing = Closed		At $U_s$ 17 V W	1.6			2.3
		24 V W	2.8			4.5
		30 V W	4.4			7
<b>Permissible residual current</b> of the electronics (for 0 signal)			< 10 mA x (24 V/ $U_s$ )			< 6 mA x (24 V/ $U_s$ )
<b>Overvoltage configuration of the solenoid coil</b>			Without overvoltage damping 	With diode 	With suppressor diode 	With varistor 
<b>Operating times of the coupling contactors</b>						
• Closing						
- At 17 V	ON-delay NO	ms	40 ... 130			70 ... 270
	OFF-delay NC	ms	30 ... 80			60 ... 250
- At 24 V	ON-delay NO	ms	35 ... 60			65 ... 90
	OFF-delay NC	ms	25 ... 40			55 ... 80
- At 30 V	ON-delay NO	ms	25 ... 50			52 ... 65
	OFF-delay NC	ms	15 ... 30			43 ... 57
• Closing at 17 ... 30 V	OFF-delay NO	ms	7 ... 20	38 ... 65	7 ... 20	19 ... 21
	ON-delay NC	ms	20 ... 30	55 ... 75	20 ... 30	25 ... 31

Contactors	Type		3RT20 1.-1MB4.-0KT0	3RT20 1.-1VB4.	3RT20 1.-1WB4.	
	Size		S00	S00	S00	
	Width	mm	45	45	45	
<b>General data</b>						
<b>Mechanical endurance</b>		Operating cycles	30 million			
<b>Protective separation</b> between the coil and the main contacts acc. to EN 60947-1, Appendix N		V	400			
<b>Control</b>						
<b>Solenoid coil operating range</b>			0.85 ... 1.85 x $U_s$			
<b>Power consumption of the solenoid coil</b> (for cold coil) Closing = Closed		At $U_s$ 24 V W	1.6			
<b>Permissible residual current, upright mounting position</b>			On request			
<b>Overvoltage configuration of the solenoid coil</b>			Without overvoltage damping 	With diode 	With suppressor diode 	
<b>Operating times of the coupling contactors</b>						
• Closing						
- At 20.5 V	ON-delay NO	ms	30 ... 120			
	OFF-delay NC	ms	20 ... 110			
- At 24 V	ON-delay NO	ms	25 ... 90			
	OFF-delay NC	ms	15 ... 80			
- At 44 V	ON-delay NO	ms	15 ... 60			
	OFF-delay NC	ms	10 ... 50			
• Opening	OFF-delay NO	ms	5 ... 20	20 ... 80	5 ... 20	
	ON-delay NC	ms	10 ... 30	30 ... 90	10 ... 30	