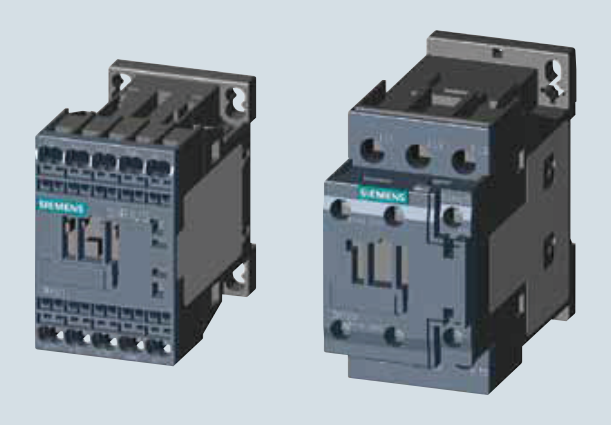
Overview

Sizes S00 and S0, up to 18.5 kW



Contactor size S00 with spring-type terminals and contactor size S0 with screw terminals

Standards

IEC 60947-1, EN 60947-1,
IEC 60947-4-1, EN 60947-4-1,
IEC 60947-5-1, EN 60947-5-1 (auxiliary switches)

The 3RT2 contactors are climate-proof and are suitable and tested for use worldwide.

If the devices are used in ambient conditions which deviate from common industrial conditions (EN 60721-3-3 "Stationary Use, Weather-Protected"), information must be obtained about possible restrictions with regard to the reliability and endurance of the device and possible protective measures. In this case contact our Technical Assistance.

3RT2 contactors are finger-safe according to EN 50274.

Auxiliary contact complement

Size S00 contactors have an auxiliary contact integrated in the basic unit. The basic units size S0 contain two integrated auxiliary contacts (1 NO + 1 NC).

All basic units (except coupling contactors) can be extended with auxiliary switch blocks. For size S0 and higher, complete units with 2 NO + 2 NC are available (terminal designation according to EN 50012); the auxiliary switch block can be removed.

- Additional auxiliary switches with a maximum of four auxiliary contacts can be mounted. The combination of a 2-pole auxiliary switch for mounting on the front and an auxiliary switch for mounting on the side is not permitted.
- Of the maximum number of auxiliary contacts (integrated plus mountable) possible on the device, no more than four NC contacts are permitted for both sizes.

Contact reliability

If voltages ≤ 110 V and currents ≤ 100 mA are to be switched, the auxiliary contacts of the 3RT2 contactor or 3RH21 contactor relay should be used as they guarantee a high level of contact reliability.

These auxiliary contacts are suitable for solid-state circuits with currents ≥ 1 mA at a voltage ≥ 17 V.

Connection methods

The 3RT2 contactors are available with screw terminals or spring-type terminals.

Short-circuit protection of the contactors

For more information about short-circuit protection of contactors without overload relay, see "Technical specifications" on pages 2/16 and 2/23. For short-circuit protection of the contactors with overload relay see "Overload Relays".

To assemble fuseless motor feeders you must select combinations of motor starter protector and contactor.

Motor protection

3RU21 thermal overload relays or 3RB30 solid-state overload relays can be fitted to the 3RT2 contactors for protection against overload. The overload relays must be ordered separately (see "Overload Relays").

Ratings of induction motors

The quoted rating (in kW) refers to the output power on the motor shaft (according to the nameplate).

Control supply voltage

All contactors are available with AC or DC operation. Available in addition on the contactors size S0 is a UC operating mechanism which can be operated with AC (45 to 70 Hz) as well as with DC.

Surge suppression

3RT2 contactors can be retrofitted with RC elements, varistors, suppressor diodes or diode assemblies (assembly of diode and Zener diode for short break times) for damping opening surges in the coil.

The surge suppressors are plugged onto the front of size S00 contactors. Space is provided for them next to a snap-on auxiliary switch block.

The surge suppressors can be plugged onto the front of size S0 contactors.

Note:

The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are attenuated against voltage peaks (noise suppression diode 6 to 10 times; diode assembly 2 to 6 times, varistor and suppressor diode +2 to 5 ms).

S00 and S0 contactors with communication interface

The S00 and S0 contactors with communication interface are essential for mounting the SIRIUS function modules for connection to the control system through IO-Link or AS-Interface.

SIRIUS 3RT20 contactors, 3-pole, 3 ... 18.5 kW

Order No. scheme

Digit of the Order No.	1st - 3rd	4th	5th	6th	7th		8th	9th	10th	11th	12th		13th	14th	15th	16th
	□□□	□	□	□	□	–	□	□	□	□	□	–	□	□	□	□
SIRIUS power contactors	3 R T															
Innovations		2														
Device type (e. g. 0 = 3-pole motor contactor, 3 = 4-pole AC-1 contactor)			□													
Contactor size (1 = S00, 2 = S0)				□												
Power dependent on size (e. g. 27 = 15 kW)					□											
Connection type (1 = screw, 2 = spring)							□									
Operating range / solenoid coil circuit (e. g. A = AC standard / without)								□								
Rated control supply voltage (e. g. P0 = 230 V, 50 Hz)									□	□						
Auxiliary switches (e. g. S0: 0 = 1 NO + 1 NC integrated)											□					
Special version													□	□	□	□
Example	3 R T	2	0	2	7	–	1	A	P	0	0					

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

For your orders, please use the order numbers quote in the catalog in the Selection and ordering data.

Accessories

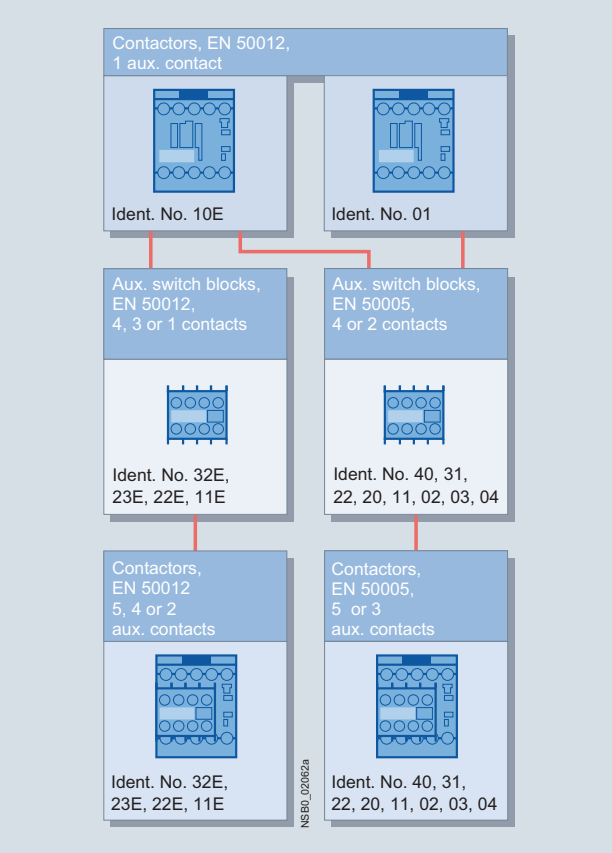
Auxiliary switch blocks

Various auxiliary switch blocks can be added to the 3RT2 basic units depending on the application:

Size S00, 3RT20 1. contactors

Terminal designations according to EN 50012 or EN 50005

Size S00 contactors have an auxiliary contact (NO or NC) integrated in the basic unit.



Contactor, size S00, with 4-pole auxiliary switch block

Contactors with one NO contact as auxiliary contact with screw or spring-type terminals, identification number 10, can be expanded into contactors with 2, 3, 4 and 5 auxiliary contacts according to EN 50012 using auxiliary switch blocks. The identification numbers according to

EN 50012, e. g. 11, apply to the basic device plus mounted auxiliary switch.

All contactors of size S00 with one auxiliary contact (identification numbers 10 or 01) and the contactors with 4 main contacts can be expanded into contactors with 2 to 5 auxiliary contacts using auxiliary switch blocks with the identification numbers 40 to 04 (in the case of contactors with 4 main contacts: 1 to 4 auxiliary contacts) according to EN 50005.

Of the auxiliary contacts (integrated plus mountable) possible on the device, no more than four NC contacts are permitted.

Single- or 2-pole auxiliary switch blocks with connection options from above or below enable easy and clearly arranged wiring especially for the installation of network access junctions. These auxiliary switch blocks are offered only with screw terminals.

If the installation space is limited in depth, 2-pole auxiliary switch blocks (screw or spring-type terminals) can be attached laterally for use on the right or on the left.

The solid-state compatible 3RH29 1. -1NF . . auxiliary switch blocks for contactors of size S00 include 2 enclosed contacts. They are suitable in particular for switching small voltages and currents (hard gold-plated contacts) and for operation in dusty atmospheres. The NC auxiliary contacts are not mirror contacts.

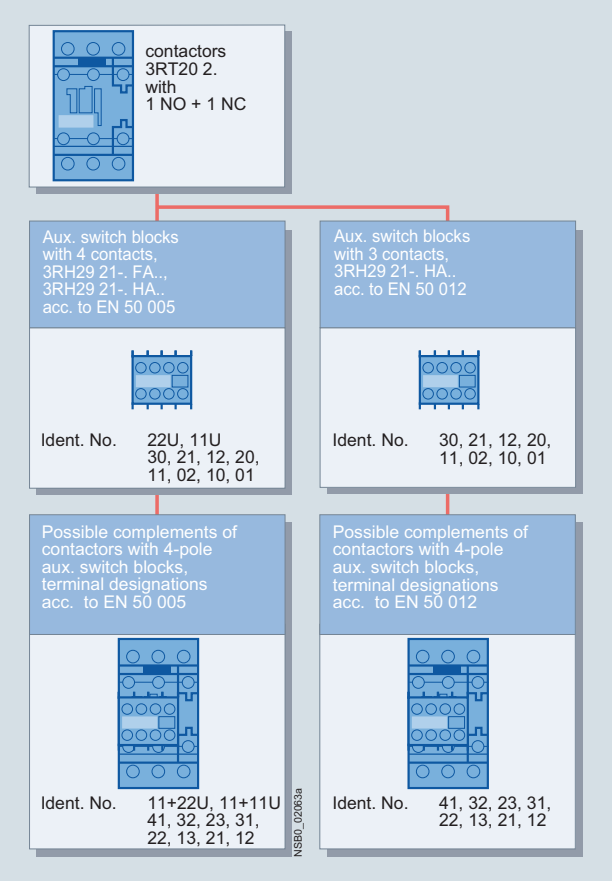
All the previously mentioned auxiliary switch variants can be snap-fitted onto the front of the contactor. The auxiliary switch block has a centrally positioned release lever for disassembly.

SIRIUS 3RT20 contactors, 3-pole, 3 ... 18.5 kW

Size S0, 3RT20 2 . contactors

Terminal designations according to EN 50005 or EN 50012.

Size S0 contactors have 2 auxiliary contacts (1 NO and 1 NC) integrated in the basic unit.



Contactor, size S0, with 4-pole auxiliary switch block

A diverse range of auxiliary switch blocks is available for various applications.

One 4-pole auxiliary switch block (screw or spring-type terminals) can be snapped onto the front of the contactors. When the contactors are switched on, the NC contacts are opened first and then the NO contacts are closed.

Also available are 1- or 2-pole auxiliary switch blocks (screw terminals) for cable entry from above or below in the design of a quad block (feeder auxiliary switch).

If the installation space is limited in depth, 2-pole auxiliary switch blocks (screw or spring-type terminals) can be attached laterally for use on the right or on the left.

The auxiliary switch blocks attached to the front can be disassembled with the help of a centrally arranged release lever; the laterally attached auxiliary switch blocks are easy to remove by pressing on the checkered surfaces.

The terminal designation of the individual auxiliary switch blocks corresponds to EN 50005 or EN 50012, that of the complete contactor with auxiliary switch block 2 NO + 2 NC corresponds to EN 50012.

The laterally mountable auxiliary switch blocks according to EN 50012 can be used only when no 4-pole auxiliary switch blocks are snapped onto the front. As 2 auxiliary contacts 1 NO + 1 NC are already integrated in the basic device, mounting according to EN 50012 is permitted only on the right of the device.

The front 1- or 2-pole auxiliary switch blocks with connection option from below or above have fixed location identifiers. These auxiliary switch blocks are available only with screw terminals.

If the 4-pole and solid-state compatible auxiliary switch blocks are used, the location identifiers on the basic device must be noted.

Two enclosed contacts are available with the 3RH29 11-.NF11 solid-state compatible auxiliary switch block, which can be attached to the front. The 3RH29 21-2DE11 laterally mountable, solid-state compatible auxiliary switch block likewise contains

2 enclosed contacts (1 NO + 1 NC). The enclosed contacts are suitable in particular for switching small voltages and currents (hard gold-plated contacts) and for operation in dusty atmospheres. The front NC auxiliary contacts are not mirror contacts.

A maximum of 4 auxiliary contacts can be attached; the auxiliary switch blocks used can be of any version. Of the auxiliary contacts (integrated plus mountable) possible on the device, no more than four NC contacts are permitted.

For 4-pole contactors see 3RT23 and 3RT25.

SIRIUS 3RT20 contactors, 3-pole, 3 ... 18.5 kW

Technical specifications

Contactor	Type Size		3RT2 S00 and S0
Rated data of the auxiliary contacts			
Acc. to IEC 60947-5-1/EN 60947-5-1 The data apply to integrated auxiliary contacts and contacts in the auxiliary switch blocks for contactor sizes S00 to S0[1)]			
Rated insulation voltage U_i (pollution degree 3)		V	690
Conventional thermal current I_{th} = Rated operational current I_e/AC-12		A	10
AC load			
Rated operational current I_e/AC-15/AC-14			
• For rated operational voltage U_e	24 V	A	10[1)]
	110 V	A	10[1)]
	125 V	A	10[1)]
	220 V	A	10[1)]
	230 V	A	10[1)]
	380 V	A	3
	415 V	A	3
	500 V	A	2
	660 V	A	1
	690 V	A	1
DC load			
Rated operational current I_e/DC-12			
• For rated operational voltage U_e	24 V	A	6
	60 V	A	6
	110 V	A	3
	125 V	A	2
	220 V	A	1
	440 V	A	0.3
	600 V	A	0.15
Rated operational current I_e/DC-13			
• For rated operational voltage U_e	24 V	A	6
	60 V	A	2
	110 V	A	1
	125 V	A	0.9
	220 V	A	0.3
	440 V	A	0.14
	600 V	A	0.1
Contact reliability at 17 V, 1 mA Acc. to EN 60947-5-4			Frequency of contact faults < 10^{-8} i. e. <1 fault per 100 million operating cycles
Endurance of the auxiliary contacts			

It is assumed that the operating mechanisms are switched randomly, i. e. not synchronized with the phase angle of the supply system.

The contact endurance is mainly dependent on the breaking current.

The characteristic curves apply to:
- Integrated auxiliary contacts on 3RT20
- 3RH29 11, 3RH29 21 auxiliary switch blocks[1)]

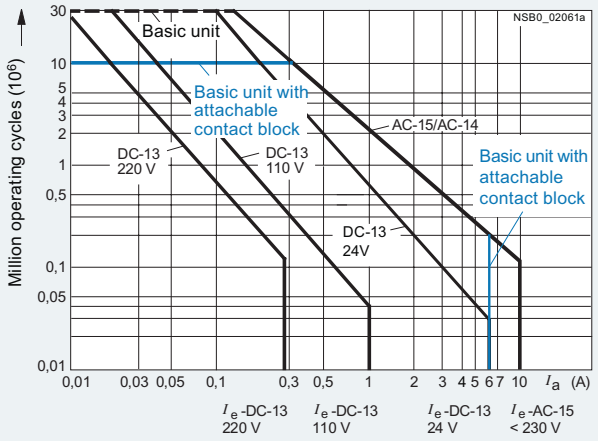


Diagram legend: |
I_a = Breaking current
I_e = Rated operational current

1) Integrated auxiliary contacts in size S0 and auxiliary switches for snapping onto the front and for mounting onto the side in size S00 and S0: I_e = 6 A for AC-15/AC-14.

SIRIUS 3RT20 contactors, 3-pole, 3 ... 18.5 kW

Contactor	Type	**3RT2**
	Size	**S00 and S0**

Endurance of the main contacts

The characteristic curves show the contact endurance of the contactors when switching resistive and inductive AC loads (AC-1/AC-3) depending on the breaking current and rated operational voltage. It is assumed that the operating mechanisms are switched randomly, i. e. not synchronized with the phase angle of the supply system.

The rated operational current I_e complies with utilization category AC-4 (breaking six times the rated operational current) and is intended for a contact endurance of at least 200 000 operating cycles.

If a shorter endurance is sufficient, the rated operational current I_e/AC-4 can be increased.

If the contacts are used for **mixed operation**, i. e. normal switching (breaking the rated operational current according to utilization category AC-3) in combination with intermittent inching (breaking several times the rated operational current according to utilization category AC-4), the contact endurance can be calculated approximately from the following equation:Characters in the equation:

$$X = \frac{A}{1 + \frac{C}{100}\left(\frac{A}{B} - 1\right)}$$

X Contact endurance for mixed operation in operating cycles

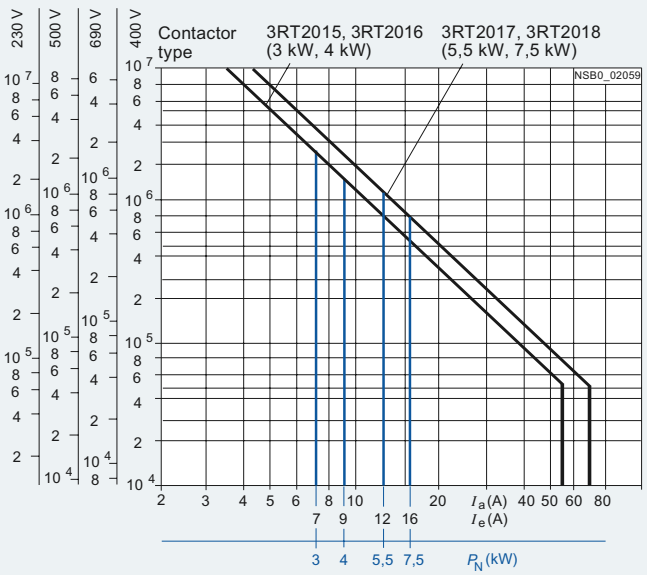
A Contact endurance for normal operation ($I_a = I_e$) in operating cycles

B Contact endurance for inching (I_a = multiple of I_e) in operating cycles

C Inching operations as a percentage of total switching operations

Size S00

Operating cycles at



Size S0

Operating cycles at

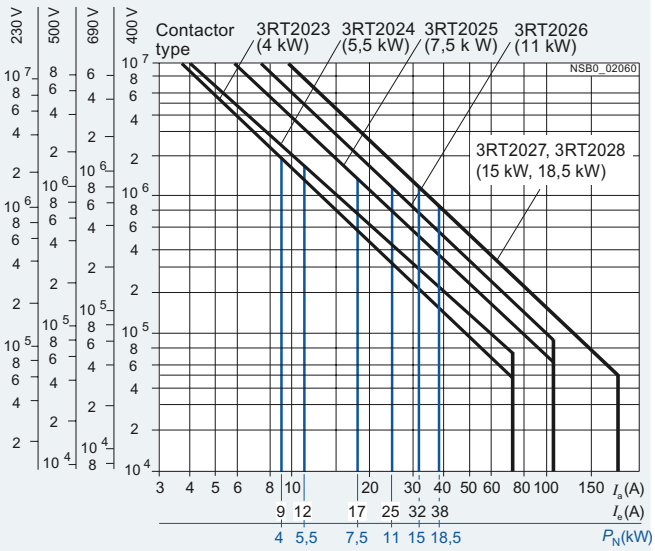
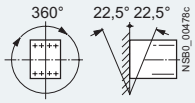


Diagram legend:
P_N = Rated power for squirrel-cage motors at 415 V
I_a = Breaking current
I_e = Rated operational current

SIRIUS 3RT20 contactors, 3-pole, 3 ... 18.5 kW

Type		3RT20 1 5, 3RT20 16	3RT20 1 7, 3RT20 18
Size		S00	S00
Dimensions (W x H x D)[1]	mm	45 x 57.5 x 73 / 45 x 70 x 73	
• With mounted auxiliary switch block	mm	45 x 57.5 x 116 / 45 x 70 x 121	
• With mounted function block	mm	45 x 57.5 x 142 / 45 x 70 x 142	
General data			
Permissible mounting positions			
The contactors are designed for operation on a vertical mounting surface.			
Mechanical endurance			
• Basic unit	Operating cycles	30 million	
• Basic unit with snap-on auxiliary switch block	Operating cycles	10 million	
• Solid-state compatible auxiliary switch block	Operat. cycles	5 million	
Electrical endurance		[2]	
Rated insulation voltage U_i (pollution degree 3)	V	690	
Rated impulse withstand voltage U_{imp}	kV	6	
Protective separation between the coil and the main contacts acc. to EN 60947-1, Appendix N	V	415	
Mirror contacts			
A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with a NO main contact.			
• 3RT20 1 ., 3RT23 1 . (removable auxiliary switch block)		Yes, this applies to both the basic unit as well as to between the basic unit and the mounted auxiliary switch block acc. to EN 60947-4-1, Appendix F	
• 3RT20 1 ., 3RT23 1 . (permanently mounted auxiliary switch block)		Yes, acc. to EN 60947-4-1, Appendix F	
• 3RH29 19- . NF . . solid-state compatible auxiliary switch blocks have no mirror contacts.			
Ambient temperature			
• During operation	°C	-25 ... +60	
• During storage	°C	-55 ... +80	
Degree of protection acc. to EN 60947-1, Appendix C		IP20, coil assembly IP40	
Touch protection acc.to EN 50274		Finger-safe	
Shock resistance rectangular pulse			
• AC operation	*g*/ms	6.7/5 and 4.2/10	7.3/5 and 4.7/10
• DC operation	*g*/ms	6.7/5 and 4.2/10	7.3/5 and 4.7/10
Shock resistance sine pulse			
• AC operation	*g*/ms	10.5/5 and 6.6/10	11.4/5 and 7.3/10
• DC operation	*g*/ms	10.5/5 and 6.6/10	11.4/5 and 7.3/10
Conductor cross-sections		[3]	
Short-circuit protection for contactors without overload relays			
		For short-circuit protection for contactors with overload relays see "Protection Equipment —> Overload Relays"	
Main circuit			
• Fuse links, operational class gG : NH 3NA, DIAZED 5SB, NEOZED 5SE acc. to IEC 60947-4-1/ EN 60947-4-1			
- Type of coordination "1"	A	35	50
- Type of coordination "2"	A	20	25
- Weld-free[4]	A	10	10
• Miniature circuit breakers (up to 230 V) with C characteristic Short-circuit current 1 kA, type of coordination "1"	A	10	10
Auxiliary circuit			
• Fuse links, operational class gG : DIAZED 5SB, NEOZED 5SE (weld-free protection for $I_k \geq 1$ kA)	A	10	
• Miniature circuit breakers up to 230 V with C characteristic Short-circuit current $I_k < 400$ A	A	6	

1) Dimensions for devices with screw terminals / spring-type terminals.

2) For endurance of the main contacts see page 2/15.

3) For conductor cross-sections see page 2/18.

4) Test conditions according to IEC 60947-4-1.

SIRIUS 3RT20 contactors, 3-pole, 3 ... 18.5 kW

Contactor	Type Size		3RT20 1 5, 3RT20 1 6 S00	3RT20 1 7, 3RT20 1 8 S00
Control circuit				
Coil operating range				
• AC operation	50 Hz		0.8 ... 1.1 x U_s	
	60 Hz		0.85 ... 1.1 x U_s	
• DC operation	Up to 50 °C		0.8 ... 1.1 x U_s	
	Up to 60 °C		0.85 ... 1.1 x U_s	
Power consumption of the solenoid coils (when coil is cold and 1.0 x U_s)				
• AC operation, 50/60 Hz, standard version				
- Closing		VA	27/24.3	37/33
- P.f.			0.8/0.75	0.8/0.75
- Closed		VA	4.2/3.3	5.7/4.4
- P.f.			0.25/0.25	0.25/0.25
• DC operation (closing = closed)		W	4	4
Operating times[1]				
Total break time = Opening delay + Arcing time				
• AC operation for 0.8 ... 1.1 × U_s	Closing delay	ms	9 ... 35	8 ... 33
	Opening delay	ms	3.5 ... 14	4 ... 15
• DC operation for 0.85 ... 1.1 × U_s	Closing delay	ms	30 ... 100	30 ... 100
	Opening delay	ms	7 ... 13	7 ... 13
• Arcing time		ms	10 ... 15	10 ... 15
Operating times for 1.0 x U_s[1]				
• AC operation	Closing delay	ms	9.5 ... 24	9 ... 22
	Opening delay	ms	4 ... 14	4.5 ... 15
• DC operation	Closing delay	ms	35 ... 50	35 ... 50
	Opening delay	ms	7 ... 12	7 ... 12

1) The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are attenuated against voltage peaks (noise suppression diode 6 to 10 times; diode assembly 2 to 6 times, varistor +2 to 5 ms).

Contactor	Type Size		3RT20 15 S00	3RT20 16 S00	3RT20 17 S00	3RT20 18 S00
Main circuit						
AC capacity						
Utilization category AC-1 **Switching resistive loads**						
• Rated operational current I_e	At 40 °C up to 690 V	A	18	22	22	22
	At 60 °C up to 690 V	A	16	20	20	20
• Rated power for AC loads[1] P.f.= 0.95 (at 60 °C)	415 V	kW	11	13	13	13
• Minimum conductor cross-section for loads with I_e	At 40 °C	mm²	2.5	2.5	2.5	2.5
	At 60 °C	mm²	2.5	2.5	2.5	2.5
Utilization categories AC-2 and AC-3						
• Rated operational currents I_e	Up to 415 V	A	7	9	12	16
	440 V	A	7	9	11	15
	500 V	A	6	7.7	9.2	12.4
	690 V	A	4.9	6.7	6.7	8.8
• Rated power for slipring or squirrel-cage motors at 50 and 60 Hz	At 230 V	kW	2.2	3	3	4
	415 V	kW	3	4	5.5	7.5
	500 V	kW	3.5	4.5	5.5	7.5
	690 V	kW	4	5.5	5.5	7.5
Thermal load capacity	10 s current[2]	A	56	72	96	128

1) Industrial furnaces and electric heaters with resistance heating, etc. (increased power consumption on heating up has been taken into account).

2) According to IEC 60947-4-1.
For rated values for various start-up conditions see "Protection Equipment" —> "Overload Relays".

SIRIUS 3RT20 contactors, 3-pole, 3 ... 18.5 kW

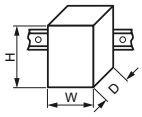
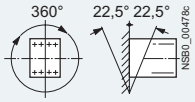
Contactor	Type / Size		3RT20 15 S00	3RT20 16 S00	3RT20 17 S00	3RT20 18 S00
Main circuit						
AC capacity						
Power loss per conducting path	At I_e/AC-3	W	0.42	0.7	1.24	2.2
Utilization category AC-4 (for $I_a = 6 \times I_e$)[1]						
• Rated operational current I_e	Up to 415 V	A	6.5	8.5	8.5	11.5
• Rated power for squirrel-cage motors with 50 Hz and 60 Hz	Up to 415 V	kW	3	4	4	5.5
• The following applies to a contact endurance of about 200 000 operating cycles:						
- Rated operational currents I_e	Up to 415 V	A	2.6	4.1	4.1	5.5
	690 V	A	1.8	3.3	3.3	4.4
- Rated power for squirrel-cage motors with 50 Hz and 60 Hz	At 230 V	kW	0.67	1.1	1.1	1.5
	415 V	kW	1.15	2	2	2.5
	500 V	kW	1.45	2	2	3
	690 V	kW	1.15	2.5	2.5	3.5
Switching frequency						
Switching frequency z in operating cycles/hour						
• Contactors without overload relay	No-load switching frequency AC	h^{-1}	10 000			
	No-load switching frequency DC	h^{-1}	10 000			
Dependence of the switching frequency z' on the operational current I' and operational voltage U': $z' = z \cdot (I_e/I') \cdot (400\ V/U')^{1.5} \cdot 1/h$	Rated operation	h^{-1}				
	AC-1 (AC/DC)	h^{-1}	1 000			
	AC-2 (AC/DC)	h^{-1}	750			
	AC-3 (AC/DC)	h^{-1}	750			
	AC-4 (AC/DC)	h^{-1}	250			
• Contactors with overload relays (mean value)		h^{-1}	15			

1) The data only apply to 3RT25 16 and 3RT25 17 (2 NO + 2 NC) up to a rated operational voltage of 415 V.

Contactor	Type / Size		3RT20 15 S00	3RT20 16 S00	3RT20 17 S00	3RT20 18 S00
Conductor cross-sections						
Main conductors and auxiliary conductors (1 or 2 conductors can be connected)			**Screw terminals**			
• Solid		mm^2	2 x (0.5 ... 1.5)[1]; 2 x (0.75 ... 2.5)[1] according to IEC 60947; max. 2 x (0.5 ... 4)			
• Finely stranded with end sleeve		mm^2	2 x (0.5 ... 1.5)[1]; 2 x (0.75 ... 2.5)[1]			
• AWG cables, solid or stranded		AWG	2 x (20 ... 16)[1]; 2 x (18 ... 14)[1]; 2 x 12			
• Terminal screw			M3 (for standard screwdriver size 2 and Pozidriv 2)			
• Tightening torque		Nm	0.8 ... 1.2 (7 ... 10.3 lb.in)			
Main conductors, auxiliary conductors and coil terminals (1 or 2 conductors can be connected)			**Spring-type terminals**			
• Operating devices		mm	3.0 x 0.5; 3.5 x 0.5			
• Solid		mm^2	2 x (0.5 ... 4)			
• Finely stranded with end sleeve		mm^2	2 x (0.5 ... 2.5)			
• Finely stranded without end sleeve		mm^2	2 x (0.5 ... 2.5)			
• AWG cables, solid or stranded		AWG	1 x (20 ... 12)			
Auxiliary conductors for front and laterally mounted auxiliary switches (1 or 2 conductors can be connected)						
• Operating devices		mm	3.0 x 0.5; 3.5 x 0.5			
• Solid		mm^2	2 x (0.5 ... 2.5)			
• Finely stranded with end sleeve		mm^2	2 x (0.5 ... 1.5)			
• Finely stranded without end sleeve		mm^2	2 x (0.5 ... 1.5)			
• AWG cables, solid or stranded		AWG	2 x (20 ... 14)			

1) If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in the range specified.

SIRIUS 3RT20 contactors, 3-pole, 3 ... 18.5 kW

Type			3RT20 23	3RT20 24	3RT20 25	3RT20 26	3RT20 27	3RT20 28
Size			S0	S0	S0	S0	S0	S0
Dimensions (W x H x D) for AC operation[1]		mm	45 x 85 x 97 / 45 x 101.5 x 97					
• With mounted auxiliary switch block		mm	45 x 85 x 141 / 45 x 101.5 x 144					
• With mounted function block			45 x 85 x 166 / 45 x 101.5 x 166					
Dimensions (W x H x D) for DC operation[1]		mm	45 x 85 x 107 / 45 x 101.5 x 107					
• With mounted auxiliary switch block		mm	45 x 85 x 151 / 45 x 101.5 x 154					
• With mounted function block			45 x 85 x 176 / 45 x 101.5 x 176					
General data								
Permissible mounting positions								
The contactors are designed for operation on a vertical mounting surface.								
Mechanical endurance								
• Basic unit		Operating cycles	10 million					
• Basic unit with snap-on auxiliary switch block		Operating cycles	10 million					
• Solid-state compatible auxiliary switch block		Operat. cycles	5 million					
Electrical endurance			[2]					
Rated insulation voltage U_i (pollution degree 3)		V	690					
Rated impulse withstand voltage U_{imp}		kV	6					
Protective separation between the coil and the main contacts (acc. to EN 60947-1, Appendix N)		V	415					
Mirror contacts								
A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with a NO main contact.								
• 3RT20 2 . , 3RT23 2 . (removable auxiliary switch block)			Yes, acc. to EN 60947-4-1, Appendix F					
• 3RT20 2 . , 3RT23 2 . (permanently mounted auxiliary switch block)			Yes, acc. to EN 60947-4-1, Appendix F					
Permissible ambient temperature								
• During operation		°C	-25 ... +60					
• During storage		°C	-55 ... +80					
Degree of protection acc. to EN 60947-1, Appendix C			IP20, coil assembly IP20					
Touch protection acc.to EN 50274			Finger-safe					
Shock resistance rectangular pulse								
• AC operation		g/ms	7.5/5 and 4.7/10			8.3/5 and 5.310		
• DC operation		g/ms	>10/5 and 7.5/10			>10/5 and 7.5/10		
Shock resistance sine pulse								
• AC operation		g/ms	11.8/5 and 7.4/10			13.5/5 and 8.3/10		
• DC operation		g/ms	>15/5 and >10/10			>15/5 and >10/10		
Conductor cross-sections			[3]					
Short-circuit protection for contactors without overload relays								
Main circuit			For short-circuit protection for contactors with overload relays see "Protection Equipment —> Overload Relays".					
• Fuse links, operational class gG : Type NH 3NA, DIAZED 5SB, NEOZED 5SE acc. to IEC 60947-4-1/ EN 60947-4-1								
- Type of coordination "1"		A	63			100	125	
- Type of coordination "2"		A	25			35	50	
- Weld-free[4]		A	10			16	16	
• Miniature circuit breakers with C characteristic (short-circuit current 3 kA, type of coordination "1")		A	25			32	40	
Auxiliary circuit								
• Fuse links, operational class gG : DIAZED 5SB, NEOZED 5SE (weld-free protection for $I_k \geq 1$ kA)		A	10					
• Miniature circuit breaker with C characteristic (short-circuit current $I_k < 400$ A)		A	10					

1) Dimensions for devices with screw terminals / spring-type terminals.

2) For endurance of the main contacts see page 2/15.

3) For conductor cross-sections see page 2/18.

4) Test conditions according to IEC 60947-4-1.

SIRIUS 3RT20 contactors, 3-pole, 3 ... 18.5 kW

Contactor	Type	3RT20 23 ... 3RT20 25	3RT20 26 ... 3RT20 28	3RT20 2. -.NB3	3RT20 2. -.NF3..	3RT20 2. -.NP3
	Size	S0	S0	S0	S0	S0
Control circuit						
Coil operating range	AC/DC	0.8 ... 1.1 x U_s		0.7 ... 1.3 x U_s		
Power consumption of the solenoid coils (when coil is cold and 1.0 x U_s)						
• AC operation, 50 Hz, standard version						
- Closing	VA	65	77	6.5	13.6	16.1
- P.f.		0.82	0.82	0.98	0.98	0.98
- Closed	VA	7.6	9.8	1.26	1.91	3.41
- P.f.		0.25	0.25	0.25	0.25	0.25
• AC operation, 50/60 Hz, standard version						
- Closing	VA	68/67	81/79	6.5/5.7	13.6/13.2	16.1/15.9
- P.f.		0.72/0.74	0.72/0.74	0.98/0.96	0.98/0.99	0.99/0.99
- Closed	VA	7.9/6.5	10.5/8.5	1.26/1.30	1.91/1.90	3.41/3.58
- P.f.		0.25/0.28	0.25/0.28	0.78/0.8	0.61/0.61	0.36/0.45
• DC operation (closing = closed)	W	5.9/5.9	5.9/5.9	6.7/0.8	13.2/1.56	15/1.83
Operating times for 0.8 ... 1.1 x U_s[1]						
Total break time = Opening delay + Arcing time						
• AC operation						
- Closing delay	ms	9 ... 38	8 ... 40	60 ... 80	50 ... 70	60 ... 80
- Opening delay	ms	4 ... 16	4 ... 16	30 ... 45	35 ... 45	35 ... 45
• DC operation						
- Closing delay	ms	50 ... 170	50 ... 170	60 ... 75	50 ... 70	50 ... 75
- Opening delay	ms	15 ... 17.5	15 ... 17.5	30 ... 45	35 ... 45	40 ... 50
• Arcing time	ms	10	10	10	10	10
Operating times for 1.0 x U_s[1]						
• AC operation						
- Closing delay	ms	10 ... 18	10 ... 17	65 ... 80	50 ... 70	60 ... 80
- Opening delay	ms	4 ... 16	4 ... 16	30 ... 45	35 ... 45	30 ... 50
• DC operation						
- Closing delay	ms	55 ... 80	55 ... 80	60 ... 80	56 ... 70	60 ... 80
- Opening delay	ms	16 ... 17	16 ... 17	30 ... 45	35 ... 45	30 ... 50

1) The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are attenuated against voltage peaks (varistor +2 ms to 5 ms, diode assembly: 2 to 6 times).

SIRIUS 3RT20 contactors, 3-pole, 3 ... 18.5 kW

Contactor		Type	3RT20 23	3RT20 24	3RT20 25	3RT20 26	3RT20 27	3RT20 28
		Size	S0	S0	S0	S0	S0	S0
Main circuit								
AC capacity								
Utilization category AC-1, switching resistive loads								
• Rated operational current I_e	At 40 °C up to 690 V	A	40				50	
	At 60 °C up to 690 V	A	35				42	
• Rated power for AC loads[1] P.f. = 0.95 (at 60 °C)	415 V	kW	23				28	
• Minimum conductor cross-section for loads with I_e	At 40 °C	mm²	10				10	
	At 60 °C	mm²	10				10	
Utilization categories AC-2 and AC-3								
• Rated operational currents I_e	Up to 415 V	A	9	12	17	25	32	38
	440 V	A	9	12	17	22	32	35
	500 V	A	6.8	12.4	17	18	32	32
	690 V	A	6.7	9	13	13	21	21
• Rated power for slipring or squirrel-cage motors at 50 and 60 Hz	At 110 V	kW	1.1	1.5	2.2	3	4	4
	230 V	kW	3	3	4	5.5	7.5	7.5
	415 V	kW	4	5.5	7.5	11	15	18.5
	500 V	kW	4	7.5	10	11	18.5	18.5
	660 V/690 V	kW	5.5	7.5	11	11	18.5	18.5
Thermal load capacity	10 s current[2]	A	80	110	150	200	260	300
Power loss per conducting path	At I_e/AC-3	W	0.4	0.5	0.9	1.6	2.7	3.8
Utilization category AC-4 (for $I_a = 6 \times I_e$)								
• Rated operational current I_e	Up to 415 V	A	8.5	12.5	15.5	15.5	22	
• Rated power for squirrel-cage motors with 50 Hz and 60 Hz	At 415 V	kW	4	5.5	7.5	7.5	11	
• The following applies to a contact endurance of about 200†000 operating cycles:								
- Rated operational currents I_e	Up to 415 V	A	4.1	5.5	7.7	9	12	
	690 V	A	3.3	5.5	7.7	9	12	
- Rated power for squirrel-cage motors with 50 Hz and 60 Hz	At 110 V	kW	0.5	0.73	1	1.2	1.6	
	230 V	kW	1.1	1.5	2	2.5	3.4	
	415 V	kW	2	2.6	3.5	4.4	6	
	500 V	kW	2	3.3	4.6	5.6	7.5	
	690 V	kW	2.5	4.6	6	7.7	10..3	
Switching frequency								
Switching frequency *z* in operating cycles/hour								
• Contactors without overload relays	No-load switching frequency AC	h^{-1}	5 000					
	No-load switching frequency DC	h^{-1}	1 500					
Dependence of the switching frequency z' on the operational current I' and operational voltage U': $z' = z \cdot (I_e/I') \cdot (400\ V/U')^{1.5} \cdot 1/h$	AC-1 (AC/DC)	h^{-1}	1000					
	AC-2 (AC/DC)	h^{-1}	1000			750		
	AC-3 (AC/DC)	h^{-1}	1000			750		
	AC-4 (AC/DC)	h^{-1}	300			250		
• Contactors with overload relays (mean value)		h^{-1}	15					

1) Industrial furnaces and electric heaters with resistance heating, etc. (increased power consumption on heating up has been taken into account).

2) According to IEC 60947-4-1. For rated values for various start-up conditions see "Protection Equipment" —> "Overload Relays".

SIRIUS 3RT20 contactors, 3-pole, 3 ... 18.5 kW

Contactor	Type	3RT20 23	3RT20 24	3RT20 25	3RT20 26	3RT20 27	3RT20 28
	Size	S0	S0	S0	S0	S0	S0
Conductor cross-sections (1 or 2 conductors connectable)							
Main conductors		Screw terminals					
Conductor cross-section							
• Solid	mm²	2 x (1 ... 2.5)[1]; 2 x (2.5 ... 10)[1] according to IEC 60947					
• Finely stranded with end sleeve	mm²	2 x (1 ... 2.5)[1]; 2 x (2.5 ... 6)[1]; 1 x 10					
• AWG cables, solid or stranded	AWG	2 x (16 ... 12); 2 x (14 ... 8)					
• Terminal screws		M4 (Pozidriv size 2)					
- Tightening torque	Nm	2 ... 2.5 (18 ... 22 lb.in)					
Auxiliary conductors							
• Solid	mm²	2 x (0.5 ... 1.5)[1]; 2 x (0.75 ... 2.5)[1] according to IEC 60947					
• Finely stranded with end sleeve	mm²	2 x (0.5 ... 1.5)[1]; 2 x (0.75 ... 2.5)[1]					
• Solid or stranded AWG (2 x)	AWG	2 x (20 ... 16)[1]; 2 x (18 ... 14)[1]; 1 x 12					
• Terminal screws		M3					
- Tightening torque	Nm	0.8 ... 1.2 (7 ... 10.3 lb.in)					
Main conductors		Spring-type terminals					
• Operating devices	mm	3.0 x 0.5; 3.5 x 0.5					
• Solid	mm²	2 x (1 ... 10)					
• Finely stranded with end sleeve	mm²	2 x (1 ... 6)					
• Finely stranded without end sleeve	mm²	2 x (1 ... 6)					
• AWG cables, solid or stranded	AWG	2 x (18 ... 8)					
Auxiliary conductors							
• Operating devices		3.0 x 0.5; 3.5 x 0.5					
• Solid	mm²	2 x (0.5 ... 2.5)					
• Finely stranded with end sleeve	mm²	2 x (0.5 ... 1.5)					
• Finely stranded without end sleeve	mm²	2 x (0.5 ... 1.5)					
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)					

1) If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in the range specified.

Contactor		Size	S00	S0	
			Screw or spring-type terminals	Screw or spring-type terminals	Screw or spring-type terminals
			Integrated or snap-on auxiliary switch block	1- and 4-pole snap-on auxiliary switch block	Laterally mountable auxiliary switch block
CSA and UL rating of the auxiliary contacts					
Rated voltage		V AC	600	600	600
Switching capacity			A 600, Q 600	A 600, Q 600	A 300, Q 300
Uninterrupted current	At 240 V AC	A	10	10	10

SIRIUS 3RT20 contactors, 3-pole, 3 ... 18.5 kW

Contactor	Type		3RT20 15	3RT20 16	3RT20 17	3RT20 18
	Size		S00	S00	S00	S00
cULus rating						
Rated insulation voltage		V AC	600			
Uninterrupted current, at 40 °C, open and enclosed		A	20			
Maximum horsepower ratings (cULus approved values)						
• Rated power for induction motors at 60 Hz	At 200 V	hp	1.5	2	3	3
	230 V	hp	2	3	3	5
	460 V	hp	3	5	7.5	10
	575 V	hp	5	7.5	10	10
Short-circuit protection (contactor or overload relay)	At 600 V	kA	5	5	5	5
• Fuse CLASS J	A	40	40	40	40	
• Circuit breakers with overload protection acc. to UL 489		A	50	50	50	50
• Combination motor controllers type E acc.to UL 508			—[3]	—[3]	—[3]	—[3]
NEMA/EEMAC ratings						
NEMA/EEMAC size		hp	—		0	
• Uninterrupted current						
- Open		A	—		18	
- Enclosed		A	—		18	
• Rated power for induction motors at 60 Hz	At 200 V	hp	—		3	
	230 V	hp	—		3	
	460 V	hp	—		5	
	575 V	hp	—		5	
Overload relays						
• Type			3RU21 1	/ 3RB30 1		
• Setting range		A	0.11 ... 16	/ 0.1 ... 16		

Contactor	Type		3RT20 23	3RT20 24	3RT20 25	3RT20 26	3RT20 27	3RT20 28
	Size		S0	S0	S0	S0	S0	S0
cULus rating								
Rated insulation voltage		V AC	600				600	
Uninterrupted current, at 40 °C, open and enclosed		A	35				42	
Maximum horsepower ratings (cULus approved values)								
• Rated power for induction motors at 60 Hz	At 200 V	hp	2	3	5	7.5	10	10
	230 V	hp	3	3	5	7.5	10	10
	460 V	hp	5	7.5	10	15	20	25
	575 V	hp	7.5	10	15	20	25	25
Short-circuit protection (contactor or overload relay)	At 600 V	kA	5	5	5	5	5	5
• Fuse CLASS J[2]		A	45	45	45	70	110	110
• Circuit breakers with overload protection acc. to UL 489		A	70	70	70	100	100	100
• Combination motor controllers type E acc. to UL 508	At 480 V	Type	3RV20 2					
		A	—					
		kA	—					
	At 600 V	Type	3RV20 2					
		A	—					
		kA	—					
NEMA/EEMAC ratings								
NEMA/EEMAC size		hp	—			1		
• Uninterrupted current								
- Open		A	—			27		
- Enclosed		A	—			27		
• Rated power for induction motors at 60 Hz	At 200 V	hp	—			7.5		
	230 V	hp	—			7.5		
	460 V	hp	—			10		
	575 V	hp	—			10		
Overload relays								
• Type			3RU21 2	/ 3RB30 2				
• Setting range		A	1.8 ... 40	/ 0.1 ... 40				

SIRIUS 3RT20 contactors, 3-pole, 3 ... 18.5 kW

Selection and ordering data

AC operation

3RT20 1 . -1A . . .

3RT20 1 . -2A . . .

Rated data			Auxiliary contacts			Rated control supply voltage U_s at 50/60 Hz	Screw terminals	Spring-type terminals
AC-2 and AC-3, T_u: Up to 60 °C		AC-1, T_u: 40 °C						
Operational current I_e up to 415 V	Rating of induction motors at 50 Hz and **415 V**	Operational current I_e up to 690 V	Ident. No.	Version			Order No.	Order No.
				NO	NC			
A	**kW**	A				V AC		
For screw and snap-on mounting onto 35 mm standard mounting rail								
Size S00[1]								
Terminal designations according to EN 50012								
7	**3**	18	**10**	1	—	24 110 230	**3RT20 15-1AB01** **3RT20 15-1AF01** **3RT20 15-1AP01**	**3RT20 15-2AB01** **3RT20 15-2AF01** **3RT20 15-2AP01**
			01	—	1	24 110 230	**3RT20 15-1AB02** **3RT20 15-1AF02** **3RT20 15-1AP02**	**3RT20 15-2AB02** **3RT20 15-2AF02** **3RT20 15-2AP02**
9	**4**	22	**10**	1	—	24 110 230	**3RT20 16-1AB01** **3RT20 16-1AF01** **3RT20 16-1AP01**	**3RT20 16-2AB01** **3RT20 16-2AF01** **3RT20 16-2AP01**
			01	—	1	24 110 230	**3RT20 16-1AB02** **3RT20 16-1AF02** **3RT20 16-1AP02**	**3RT20 16-2AB02** **3RT20 16-2AF02** **3RT20 16-2AP02**
12	**5.5**	22	**10**	1	—	24 110 230	**3RT20 17-1AB01** **3RT20 17-1AF01** **3RT20 17-1AP01**	**3RT20 17-2AB01** **3RT20 17-2AF01** **3RT20 17-2AP01**
			01	—	1	24 110 230	**3RT20 17-1AB02** **3RT20 17-1AF02** **3RT20 17-1AP02**	**3RT20 17-2AB02** **3RT20 17-2AF02** **3RT20 17-2AP02**
16	**7.5**	22	**10**	1	—	24 110 230	**3RT20 18-1AB01** **3RT20 18-1AF01** **3RT20 18-1AP01**	**3RT20 18-2AB01** **3RT20 18-2AF01** **3RT20 18-2AP01**
			01	—	1	24 110 230	**3RT20 18-1AB02** **3RT20 18-1AF02** **3RT20 18-1AP02**	**3RT20 18-2AB02** **3RT20 18-2AF02** **3RT20 18-2AP02**

Other voltages on request.

For accessories, see page 2/151.

1) For size S00: Coil operating range
at 50 Hz: 0.8 ... 1.1 × U_s,
at 60 Hz: 0.85 ... 1.1 × U_s.

SIRIUS 3RT20 contactors, 3-pole, 3 ... 18.5 kW

AC operation

3RT20 2 . -1A . 00

3RT20 2 . -2A . 00

Rated data			Auxiliary contacts			Rated control supply voltage U_s at 50/60 Hz	Screw terminals	Spring-type terminals
AC-2 and AC-3, T_u: Up to 60 °C		AC-1, T_u: 40 °C						
Operational current I_e up to 415 V	Rating of induction motors at 50 Hz and **415 V**	Operational current I_e up to 690 V	Ident. No.	Version			Order No.	Order No.
				NO	NC			
A	**kW**	A				V AC		
For screw and snap-on mounting onto 35 mm standard mounting rail								
Size S0								
Terminal designations according to EN 50012								
9	**4**	40	**11**	1	1	24 110 230	**3RT20 23-1AC20** **3RT20 23-1AG20** **3RT20 23-1AL20**	**3RT20 23-2AC20** **3RT20 23-2AG20** **3RT20 23-2AL20**
12	**5.5**	40	**11**	1	1	24 110 230	**3RT20 24-1AC20** **3RT20 24-1AG20** **3RT20 24-1AL20**	**3RT20 24-2AC20** **3RT20 24-2AG20** **3RT20 24-2AL20**
16	**7.5**	40	**11**	1	1	24 110 230	**3RT20 25-1AC20** **3RT20 25-1AG20** **3RT20 25-1AL20**	**3RT20 25-2AC20** **3RT20 25-2AG20** **3RT20 25-2AL20**
25	**11**	40	**11**	1	1	24 110 230	**3RT20 26-1AC20** **3RT20 26-1AG20** **3RT20 26-1AL20**	**3RT20 26-2AC20** **3RT20 26-2AG20** **3RT20 26-2AL20**
32	**15**	50	**11**	1	1	24 110 230	**3RT20 27-1AC20** **3RT20 27-1AG20** **3RT20 27-1AL20**	**3RT20 27-2AC20** **3RT20 27-2AG20** **3RT20 27-2AL20**
38	**18.5**	50	**11**	1	1	24 110 230	**3RT20 28-1AC20** **3RT20 28-1AG20** **3RT20 28-1AL20**	**3RT20 28-2AC20** **3RT20 28-2AG20** **3RT20 28-2AL20**
40[1)]	**18.5**	50	**11**	1	1	24 110 230	**3RT20 28-1AC20-0JA0** **3RT20 28-1AG20-0JA0** **3RT20 28-1AL20-0JA0**	— — —

Other voltages on request.

For accessories, see page 2/151.
For spare parts, see page 2/168.

1) T_u: upto 50°C

SIRIUS 3RT20 contactors, 3-pole, 3 ... 18.5 kW

DC operation

3RT20 1 . -1B . . .

3RT20 1 . -2B . . .

3RT20 1 . -1BB4 .-0CC0

3RT20 1 . -2BB4 .-0CC0

Rated data			Auxiliary contacts			Rated control supply voltage U_s	Screw terminals	Spring-type terminals
AC-2 and AC-3, T_u: Up to 60 °C		AC-1, T_u: 40 °C						
Operational current I_e up to 415 V	Rating of induction motors at 50 Hz and **415 V**	Operational current I_e up to 690 V	Ident. No.	Version			Order No.	Order No.
				NO	NC			
A	**kW**	A				V DC		
For screw and snap-on mounting onto 35 mm standard mounting rail								
Size S00								
Terminal designations according to EN 50012								
7	**3**	18	**10**	1	—	24 220	**3RT20 15-1BB41** **3RT20 15-1BM41**	**3RT20 15-2BB41** **3RT20 15-2BM41**
			01	—	1	24 220	**3RT20 15-1BB42** **3RT20 15-1BM42**	**3RT20 15-2BB42** **3RT20 15-2BM42**
9	**4**	22	**10**	1	—	24 220	**3RT20 16-1BB41** **3RT20 16-1BM41**	**3RT20 16-2BB41** **3RT20 16-2BM41**
			01	—	1	24 220	**3RT20 16-1BB42** **3RT20 16-1BM42**	**3RT20 16-2BB42** **3RT20 16-2BM42**
12	**5.5**	22	**10**	1	—	24 220	**3RT20 17-1BB41** **3RT20 17-1BM41**	**3RT20 17-2BB41** **3RT20 17-2BM41**
			01	—	1	24 220	**3RT20 17-1BB42** **3RT20 17-1BM42**	**3RT20 17-2BB42** **3RT20 17-2BM42**
16	**7.5**	22	**10**	1	—	24 220	**3RT20 18-1BB41** **3RT20 18-1BM41**	**3RT20 18-2BB41** **3RT20 18-2BM41**
			01	—	1	24 220	**3RT20 18-1BB42** **3RT20 18-1BM42**	**3RT20 18-2BB42** **3RT20 18-2BM42**
For screw and snap-on mounting onto 35 mm standard mounting rail								
Size S00								
Contactors with communications interface								
Terminal designations according to EN 50012								
7	**3**	18	**10**	1	—	24	**3RT20 15-1BB41-0CC0**	**3RT20 15-2BB41-0CC0**
			01	—	1	24	**3RT20 15-1BB42-0CC0**	**3RT20 15-2BB42-0CC0**
9	**4**	22	**10**	1	—	24	**3RT20 16-1BB41-0CC0**	**3RT20 16-2BB41-0CC0**
			01	—	1	24	**3RT20 16-1BB42-0CC0**	**3RT20 16-2BB42-0CC0**
12	**5.5**	22	**10**	1	—	24	**3RT20 17-1BB41-0CC0**	**3RT20 17-2BB41-0CC0**
			01	—	1	24	**3RT20 17-1BB42-0CC0**	**3RT20 17-2BB42-0CC0**
16	**7.5**	22	**10**	1	—	24	**3RT20 18-1BB41-0CC0**	**3RT20 18-2BB41-0CC0**
			01	—	1	24	**3RT20 18-1BB42-0CC0**	**3RT20 18-2BB42-0CC0**

Other voltages on request.

SIRIUS 3RT20 contactors, 3-pole, 3 ... 18.5 kW

DC operation

3RT20 2 . -1B . 40

3RT20 2 . -2B . 40

3RT20 2.-1BB40-0CC0

3RT20 2.-2BB40-0CC0

Rated data			Auxiliary contacts			Rated control supply voltage U_s	Screw terminals	Spring-type terminals
AC-2 and AC-3, T_u: Up to 60 °C		AC-1, T_u: 40 °C						
Operational current I_e up to 415 V	Rating of induction motors at 50 Hz and **415 V**	Operational current I_e up to 690 V	Ident. No.	Version			Order No.	Order No.
				NO	NC			
A	**kW**	A				V DC		
For screw and snap-on mounting onto 35 mm standard mounting rail								
Size S0								
Terminal designations according to EN 50012								
9	**4**	40	**11**	1	1	24	**3RT20 23-1BB40**	**3RT20 23-2BB40**
12	**5.5**	40	**11**	1	1	24 220	**3RT20 24-1BB40** **3RT20 24-1BM40**	**3RT20 24-2BB40** **3RT20 24-2BM40**
16	**7.5**	40	**11**	1	1	24 220	**3RT20 25-1BB40** **3RT20 25-1BM40**	**3RT20 25-2BB40** **3RT20 25-2BM40**
25	**11**	40	**11**	1	1	24 220	**3RT20 26-1BB40** **3RT20 26-1BM40**	**3RT20 26-2BB40** **3RT20 26-2BM40**
32	**15**	50	**11**	1	1	24 220	**3RT20 27-1BB40** **3RT20 27-1BM40**	**3RT20 27-2BB40** **3RT20 27-2BM40**
38	**18.5**	50	**11**	1	1	24 220	**3RT20 28-1BB40** **3RT20 28-1BM40**	**3RT20 28-2BB40** **3RT20 28-2BM40**
40[1)]	**18.5**	50	**11**	1	1	24 220	**3RT20 28-1BB40-0JA0** **3RT20 28-1BB40-0JA0**	— —
For screw and snap-on mounting onto 35 mm standard mounting rail								
Size S0								
Contactors with communication interface								
Terminal designations according to EN 50012								
9	**4**	40	**11**	1	1	24	**3RT20 23-1BB40-0CC0**	**3RT20 23-2BB40-0CC0**
12	**5.5**	40	**11**	1	1	24	**3RT20 24-1BB40-0CC0**	**3RT20 24-2BB40-0CC0**
16	**7.5**	40	**11**	1	1	24	**3RT20 25-1BB40-0CC0**	**3RT20 25-2BB40-0CC0**
25	**11**	40	**11**	1	1	24	**3RT20 26-1BB40-0CC0**	**3RT20 26-2BB40-0CC0**
32	**15**	50	**11**	1	1	24	**3RT20 27-1BB40-0CC0**	**3RT20 27-2BB40-0CC0**
38	**18.5**	50	**11**	1	1	24	**3RT20 28-1BB40-0CC0**	**3RT20 28-2BB40-0CC0**

Other voltages on request.

For accessories, see page 2/151.

1) T_u: upto 50°C

SIRIUS 3RT20 contactors, 3-pole, 3 ... 18.5 kW

UC operation · AC or DC operation
Extended operating range of the solenoid coils 0.7 ... 1.3 x U_s
Integrated coil circuit

3RT20 2 . -1N . 30

3RT20 2 . -2N . 30

Rated data			Auxiliary contacts			Rated control supply voltage U_s	Screw terminals	Spring-type terminals
AC-2 and AC-3, T_u: Up to 60 °C		AC-1, T_u: 40 °C						
Operational current I_e up to 415 V	Rating of induction motors at 50 Hz and **415 V**	Operational current I_e up to 690 V	Ident. No.	Version			Order No.	Order No.
				NO	NC			
A	**kW**	A		NO	NC	V AC/DC		
For screw and snap-on mounting onto 35 mm standard mounting rail								
Size S0 [1]								
With integrated coil circuit (varistor)								
Terminal designations according to EN 50012								
12	**5.5**	40	**11**	1	1	21 ... 28 95 ... 130 200 ... 280 [1]	**3RT20 24-1NB30** **3RT20 24-1NF30** **3RT20 24-1NP30**	**3RT20 24-2NB30** **3RT20 24-2NF30** **3RT20 24-2NP30**
16	**7.5**	40	**11**	1	1	21 ... 28 95 ... 130 200 ... 280 [1]	**3RT20 25-1NB30** **3RT20 25-1NF30** **3RT20 25-1NP30**	**3RT20 25-2NB30** **3RT20 25-2NF30** **3RT20 25-2NP30**
25	**11**	40	**11**	1	1	21 ... 28 95 ... 130 200 ... 280 [1]	**3RT20 26-1NB30** **3RT20 26-1NF30** **3RT20 26-1NP30**	**3RT20 26-2NB30** **3RT20 26-2NF30** **3RT20 26-2NP30**
32	**15**	50	**11**	1	1	21 ... 28 95 ... 130 200 ... 280 [1]	**3RT20 27-1NB30** **3RT20 27-1NF30** **3RT20 27-1NP30**	**3RT20 27-2NB30** **3RT20 27-2NF30** **3RT20 27-2NP30**
38	**18.5**	50	**11**	1	1	21 ... 28 95 ... 130 200 ... 280 [1]	**3RT20 28-1NB30** **3RT20 28-1NF30** **3RT20 28-1NP30**	**3RT20 28-2NB30** **3RT20 28-2NF30** **3RT20 28-2NP30**

1) At 280 V: upper limit =1.1 x U_s.

Options

Rated control supply voltages
(the 10th and 11th position of the order number must be changed)

Rated control supply voltage U_s	Contactor type	3RT20 1	3RT20 2 [5]	3RT23 1, [5] 3RT25 1 [5]	3RT23 2, [5] 3RT25 2 [5]
	Size	S00	S0	S00	S0
Sizes S00 ... S0					
AC operation [1]					
Solenoid coils for 50 Hz (exception: Size S00: 50 and 60 Hz [2])					
24 V AC		B0	B0	B0	B0
42 V AC		D0	D0	D0	—
48 V AC		H0	H0	H0	—
110 V AC		F0	F0	F0	F0
230 V AC		P0	P0	P0	P0
400 V AC		V0	V0	V0	V0
Solenoid coils for 50 and 60 Hz [2]					
24 V AC		B0	C2	B0	C2
42 V AC		D0	D2	D0	D2
48 V AC		H0	H2	H0	H2
110 V AC		F0	G2	F0	G2
220 V AC		N2	N2	N2	N2
230 V AC		P0	L2	P0	L2
240 V AC		P2	P2	P2	P2
DC operation [1]					
12 V DC		A4	—	A4	—
24 V DC		B4	B4	B4	B4
42 V DC		D4	D4	D4	D4
48 V DC		W4	W4	W4	—
60 V DC		E4	E4	—	—
110 V DC		F4	F4	F4	F4
125 V DC		G4	G4	G4	G4
220 V DC		M4	M4	M4	M4
230 V DC		P4	P4	P4	—

Examples

AC operation	3RT20 23-1A**P**0 0	Contactor with screw terminals; with solenoid coil for 50 Hz for rated control supply voltage 230 V AC.
	3RT20 23-1A**G**2 0	Contactor with screw terminals; with solenoid coil for 50/60 Hz for rated control supply voltage 110 V AC.
DC operation	3RT20 25-2B**B**4 0	Contactor with spring-type terminals; for rated control supply voltage 24 V DC.
	3RT20 25-2B**G**4 0	Contactor with spring-type terminals; for rated control supply voltage 125 V DC.

Rated control supply voltage	Contactor type	—	3RT2. 2.-.N
$U_{s\,min}$ ... $U_{s\,max}$ [3]	Size	S00	S0
Size S0			
UC operation (AC 45 to 70 Hz, DC)			
21 ... 28 V AC/DC		—	B3
95 ... 130 V AC/DC		—	F3
200 ... 280 V AC/DC [4]		—	P3

1) For deviating coil voltages and coil operating ranges of sizes S00 and S0, the 24 V DC SITOP Power power supply unit with wide range input (93 to 264 V AC; 30 to 264 V DC) can be used for coil excitation.

2) Coil operating range
at 50 Hz: 0.8 ... 1.1 x U_s
at 60 Hz: 0.85 ... 1.1 x U_s.

3) Coil operating range: 0.7 x $U_{s\,min}$ ...1.3 x $U_{s\,max}$.

4) At 280 V: upper limit =1.1 x U_s.

5) Wideband coil voltages available.
For ordering and technical details, contact nearest sales office.