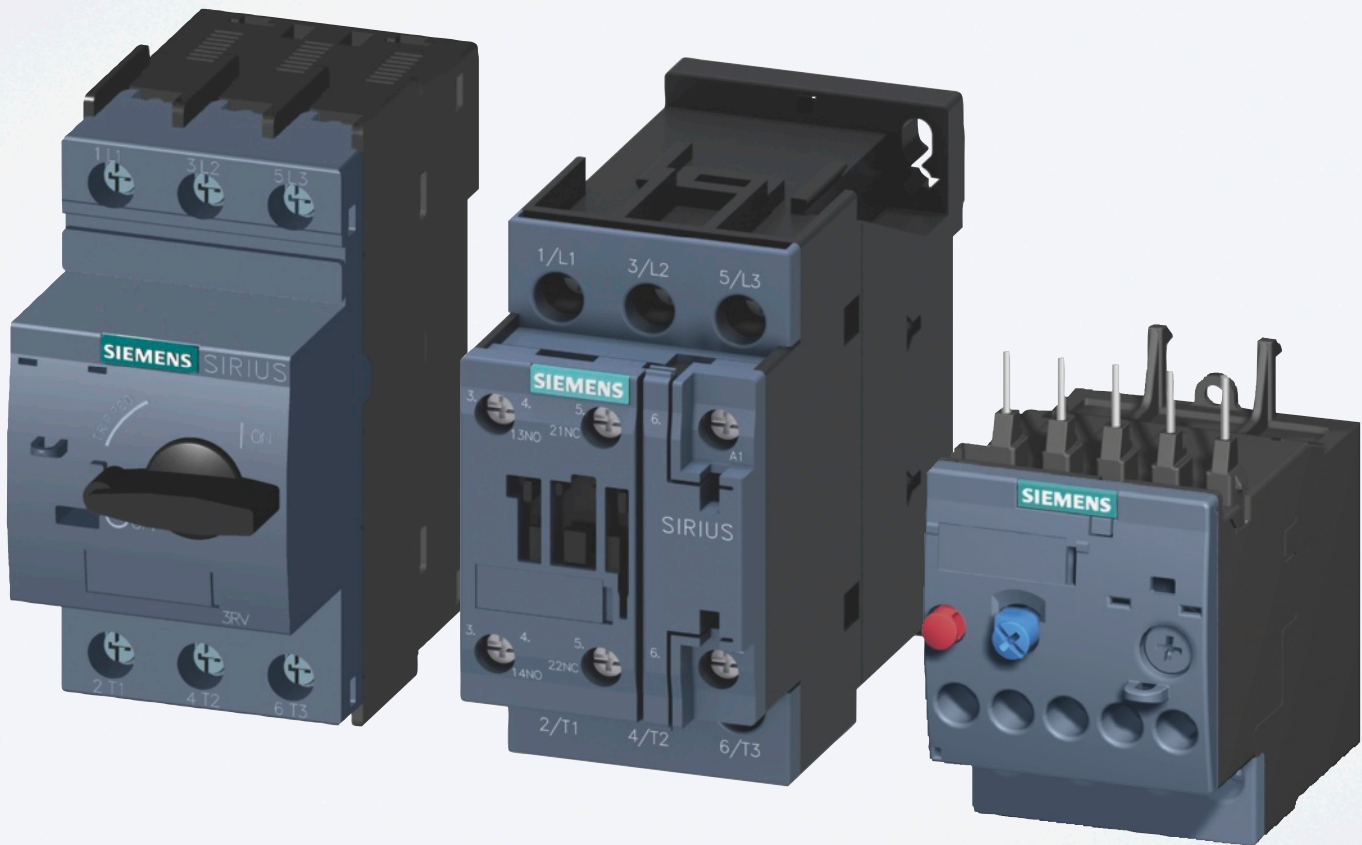


SIEMENS



Industrial Controls

3RT6/5 Contactors

3RH6 Contactor Relays

3RV6/5 Motor Starter Protector

3RU6/5 Thermal Overload Relays

SIRIUS

Catalog
IC 25

Edition
2015

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Industrial Controls

SIRIUS



Catalog IC 25 · 2015

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SIRIUS 3RV6/3RV5
Motor Starter Protectors/Circuit Breakers

1

SIRIUS 3RT6/3RT5 Contactors

2

SIRIUS 3RH6 Contactor Relays

3

SIRIUS 3RU6/3RU5 Thermal Overload Relays

4

SIRIUS 3R.6/5 a combination of high individual feature and system advantage

- SIRIUS local product line adapted to SIRIUS global product line.
- Modular system with advantage of easy assembly, simple configuration, space saving, etc.
- Advanced feature, e.g. high breaking capacity of MSP, high reliability and safety, low power consumption.
- Easy design thanks to comprehensive CAx data, wide certification, etc

Systematic solution for motor control & protection

- Modular system.
- Coverage of basic motor switching and protection components up to 250 kW.
- Uniform width, 7 sizes within 250 kW, easy configuration and assembly, space saving.

Reliable and safe operation

- Extremely long electrical and mechanical life.
- High short circuit breaking capacity of MSP for reliable protection.
- Mirror and positively driven contacts for safety application.
- IP20 finger-safe protection
- All MSPs can be padlocked.

Compact and easy assembly

- Modular design with advantage of space saving and easy assembly
- 38 A/40 A within 45 mm width
- Side-by-side mounting till 60 °C
- DIN rail mounting till 45 kW

Easy design

- Comprehensive technical data support
- International certifications
- Modular system with uniform width for easy design

SIRIUS 3RV6/3RV5 Motor Starter Protectors/Circuit Breakers



3RV6.11 (S00)



3RV6.21 (S0)



3RV5.31 (S2)

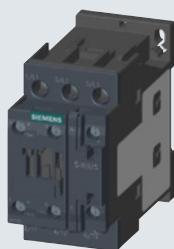


3RV5.41 (S3)

SIRIUS 3RT6/3RT5 Contactors and 3RH6 Contactor Relays



3RT601/3RH61 (S00)



3RT602 (S0)



3RT503 (S2)



3RT504 (S3)



3RT505 (S6)



3RT506 (S10)



3RT507 (S12)

SIRIUS 3RU6/3RU5 Thermal Overload Relays



3RU6116 (S00)



3RU6126 (S0)



3RU5136 (S2)



3RU5146 (S3)



3RU5156 (S6)



3RU5166 (S10)



3RU5176 (S12)

SIRIUS 3RV6/3RV5 Motor Starter Protectors/Circuit Breakers



1/2	Introduction
1/3	General data
1/10	For motor protection
1/11	For starter combinations
1/12	For transformer protection
1/13	Accessories
1/13	Mountable accessories
1/15	Mounting accessories
1/16	Rotary operating mechanisms
1/17	Technical specifications

SIRIUS 3RV6/3RV5 Motor Starter Protectors/Circuit Breakers

Introduction

Overview



Type	3RV60	3RV63	3RV64	3RV50	3RV53	3RV54
SIRIUS 3RV6/3RV5 motor starter protectors/circuit breakers up to 100 A						
Applications						
• System protection	✓ ¹⁾	--	--	✓ ¹⁾	--	--
• Motor protection	✓	--	--	✓	--	--
• Starter combinations	--	✓	--	--	✓	--
• Transformer protection	--	--	✓	--	--	✓
Size	S00, S0	S00, S0	S00, S0	S2, S3	S2, S3	S2
Rated current I_n						
• Size S00	A Up to 16	Up to 16	Up to 16	--	--	--
• Size S0	A Up to 40	Up to 40	Up to 25	--	--	--
• Size S2				Up to 50	Up to 50	Up to 40
• Size S3				Up to 100	Up to 100	--
Rated operational voltage U_e according to IEC	690 AC ²⁾	690 AC ²⁾	690 AC ²⁾	690 AC ²⁾	690 AC ²⁾	690 AC ²⁾
Rated frequency	Hz 50/60	50/60	50/60	50/60	50/60	50/60
Trip class	CLASS 10	--	CLASS 10	CLASS 10, 20	--	CLASS 10
Thermal overload releases	A 0.11 ... 0.16 up to 34 ... 40	Without ³⁾	0.11 ... 0.16 up to 20 ... 25	11 ... 16 up to 80 ... 100	Without ³⁾	11 ... 16 up to 28 ... 40
Short-circuit release A multiple of the rated current	13 times	13 times	20 times	13 times	13 times	20 times
Short-circuit breaking capacity I_{cu} at 400 V AC	kA 20/55/100	20/55/100	55/100	50/100	50/100	50/100
Pages	1/10	1/11	1/12	1/10	1/11	1/12
Accessories						
For sizes	S00 S0	S00 S0	S00 S0	S2 S3	S2 S3	S2
Auxiliary switches	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓
Signaling switches	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓
Undervoltage releases	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓
Shunt releases	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓
Isolator modules ⁴⁾	✓ ✓	✓ ✓	✓ ✓	✓ --	✓ --	✓
Insulated three-phase busbar system ⁴⁾	✓ ✓	✓ ✓	✓ ✓	✓ --	✓ --	✓
Busbar adapters ⁴⁾	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓
Door-coupling rotary operating mechanisms	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓
Remote motorized operating mechanisms ⁴⁾	-- --	-- --	-- --	✓ ✓	✓ ✓	✓
Link modules ⁴⁾	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓
Enclosures for surface mounting ⁴⁾	✓ ✓	✓ ✓	✓ ✓	-- --	-- --	--
Enclosures for flush mounting ⁴⁾	✓ ✓	✓ ✓	✓ ✓	✓ --	✓ --	✓
Front plates ⁴⁾	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓
Infeed system ⁴⁾	✓ ✓	✓ ✓	✓ ✓	-- --	-- --	--
Sealable scale covers for setting knobs ⁴⁾						
Pages	1/13					

✓ Has this function or can use this accessory

-- Does not have this function or cannot use this accessory

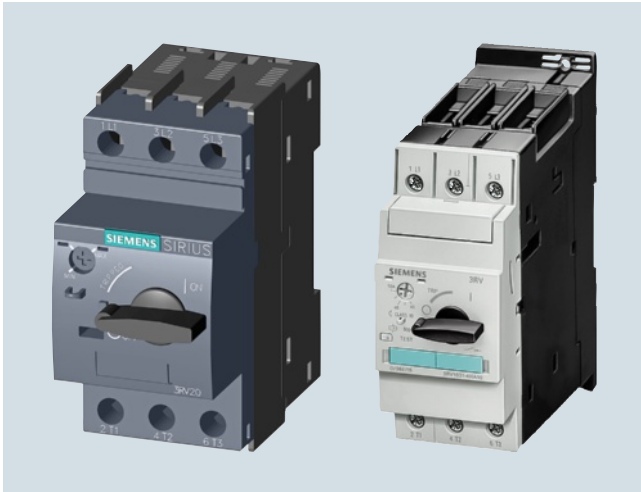
¹⁾ For symmetrical loading of the three phases.²⁾ With molded-plastic enclosure 500 V AC.³⁾ For overload protection of the motors, appropriate overload relays must be used.⁴⁾ See catalog IC 10.

SIRIUS 3RV6/3RV5 Motor Starter Protectors/Circuit Breakers

General data

1

Overview



SIRIUS motor starter protector with screw terminals, size S00 (left), size S2 (right)

The SIRIUS 3RV6/3RV5 motor starter protectors/circuit breakers are compact, current limiting motor starter protectors/circuit breakers which are optimized for load feeders. The motor starter protectors/circuit breakers are used for switching and protecting three-phase motors of up to 45 kW at 400 V AC and for other loads with rated currents of up to 100 A.

The 3RV6/3RV5 motor starter protectors are usually approved according to IEC and UL/CSA. 3RV6/3RV5 motor starter protectors/circuit breakers are approved according to UL 508 as:

- "Manual Motor Controllers"
- "Manual Motor Controllers" for "Group Installations"
- "Manual Motor Controllers Suitable for Tab Conductor Protection in Group Installations"
- "Self-Protected Combination Motor Controllers (Type E)"
Please note that for this approval the 3RV6/3RV5 motor starter protectors must be equipped with additional infeed terminals.

Corresponding short-circuit values [see pages 1/5 to 1/6](#).

Type of construction

The 3RV6/3RV5 motor starter protectors are available in two sizes:

- Size S00 - width 45 mm, max. rated current 16 A, at 400 V AC suitable for three-phase motors up to 7.5 kW
- Size S0 - width 45 mm, max. rated current 40 A, at 400 V AC suitable for three-phase motors up to 18.5 kW

The 3RV5 motor starter protectors/circuit breakers are available in two framesizes:

- Size S2 - width 55 mm, max. rated current 50 A, at 400 V AC suitable for three-phase motors up to 22 kW
- Size S3 - width 70 mm, max. rated current 100 A, at 400 V AC suitable for three-phase motors up to 45 kW

Article No. scheme

Digit of the Article No.	1st - 3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th
	□□□	□	□	□	□	-	□	□	□	□
Motor starter protectors/circuit breakers	3 R V									
SIRIUS	5/6									
Type of motor starter protector/circuit breaker	□									
Size	□									
Breaking capacity	□									
Setting range for overload release	□ □									
Trip class (CLASS)	□									
Connection methods	1									
With or without auxiliary switch	□									
Special versions										
Example	3 R V	6	0	1	1	-	1	A	A	1 0

Note:

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

For your orders, please use the article numbers quoted in the catalog in the Selection and ordering data.

SIRIUS 3RV6/3RV5 Motor Starter Protectors/Circuit Breakers

General data

1

Application

Operating conditions

3RV6/3RV5 motor starter protectors/circuit breakers are suitable for use in any climate. They are intended for use in enclosed rooms in which no severe operating conditions (such as dust, caustic vapors, hazardous gases) prevail. When installed in dusty and damp areas, suitable enclosures must be provided.

3RV6/3RV5 motor starter protectors/circuit breakers can optionally be fed from the top or from below.

The permissible ambient temperatures, the maximum switching capacities, the tripping currents and other boundary conditions can be found in the technical specifications and tripping characteristics.

3RV6/3RV5 motor starter protectors/circuit breakers are suitable for operation in IT systems (IT networks). In this case, the different short-circuit breaking capacity in the IT system must be taken into account, [see page 1/6](#).

Since operational currents, starting currents and current peaks are different even for motors with identical power ratings due to the inrush current, the motor ratings in the selection tables are only guide values. The specific rated and start-up data of the motor to be protected is always paramount to the choice of the most suitable motor starter protector/circuit breaker. This also applies to motor starter protectors for transformer protection.

Possible uses

The 3RV6/3RV5 motor starter protectors can be used:

- For short-circuit protection
- For motor protection (also with overload relay function)
- For system protection
- For short-circuit protection for starter combinations
- For transformer protection
- As main and EMERGENCY-STOP switches
- For switching of DC currents

SIRIUS 3RV6/3RV5 Motor Starter Protectors/Circuit Breakers

General data

1

Technical specifications

Short-circuit breaking capacity I_{cu} , I_{cs} according to IEC 60947-2

This table shows the rated ultimate short-circuit breaking capacity I_{cu} and the rated service short-circuit breaking capacity I_{cs} of the 3RV6/3RV5 motor starter protectors/circuit breakers with different operating voltages dependent on the rated current I_n of the motor starter protectors/circuit breakers.

The maximum rated current of this back-up fuse is indicated in the tables. The rated ultimate short-circuit breaking capacity then applies as specified on the fuse.

Power can be supplied to the motor starter protectors/circuit breakers via the terminals at the top or at the bottom without restricting the rated data. If the short-circuit current at the place of installation exceeds the rated short-circuit breaking capacity of the motor starter protector/circuit breaker as specified in the table, a back-up fuse is required. It is also possible to install an upstream motor starter protector/circuit breaker with a limiter function.

Motor starter protectors/circuit breakers	Rated current I_n	Up to 240 V AC ¹⁾			Up to 400 V AC ^{1)/} 415 V AC ²⁾			Up to 440 V AC ^{1)/} 460 V AC ²⁾			Up to 500 V AC ^{1)/} 525 V AC ²⁾			Up to 690 V AC ¹⁾		
		I_{cu}	I_{cs}	Max. fuse (gG)	I_{cu}	I_{cs}	Max. fuse (gG) ³⁾	I_{cu}	I_{cs}	Max. fuse (gG) ³⁾	I_{cu}	I_{cs}	Max. fuse (gG) ³⁾	I_{cu}	I_{cs}	Max. fuse (gG) ³⁾⁴⁾
Type	A	kA	kA	A	kA	kA	A	kA	kA	A	kA	kA	A	kA	kA	A
Size S00																
3RV6.11	0.16 ... 1.6	100	100	°	100	100	°	100	100	°	100	100	°	100	100	°
	2; 2.5	100	100	°	100	100	°	100	100	°	100	100	°	10	10	25
	3.2	100	100	°	100	100	°	100	100	°	100	100	°	10	10	32
	4; 5	100	100	°	100	100	°	100	100	°	100	100	°	6	4	32
	6.3	100	100	°	100	100	°	100	100	°	100	100	°	6	4	50
	8	100	100	°	100	100	°	50	50	63	42	42	63	6	4	50
	10	100	100	°	100	100	°	50	50	80	42	42	63	6	4	50
	12.5	100	100	°	100	100	°	50	50	80	42	42	80	6	4	63
	16	100	100	°	55	30	100	50	10	80	10	5	80	4	4	63
Size S0																
3RV6.21	16	100	100	°	55	25	100	50	10	80	10	5	80	4	2	63
	20	100	100	°	55	25	125	50	10	80	10	5	80	4	2	63
	22; 25	100	100	°	55	25	125	50	10	100	10	5	80	4	2	63
	28; 32	100	100	°	55	25	125	30	10	125	10	5	100	4	2	100
	36; 40	100	100	°	20	10	125	12	8	125	6	3	100	3	2	100
Size S2																
3RV5.31	16	100	100	°	50	25	100	50	25	100	12	6	63	5	3	63
	20	100	100	°	50	25	100	50	25	100	12	6	80	5	3	63
	25	100	100	°	50	25	100	50	15	100	12	6	80	5	3	63
	32	100	100	°	50	25	125	50	15	125	10	5	100	4	2	63
	40; 45	100	100	°	50	25	160	50	15	125	10	5	100	4	2	63
	50	100	100	°	50	25	160	50	15	125	10	5	100	4	2	80
Size S3																
3RV5.41	40	100	100	°	50	25	125	50	20	125	12	6	100	6	3	63
	50	100	100	°	50	25	125	50	20	125	12	6	100	6	3	80
	63	100	100	°	50	25	160	50	20	160	12	6	100	6	3	80
	75	100	100	°	50	25	160	50	20	160	8	4	125	5	3	100
	90; 100	100	100	°	50	25	160	50	20	160	8	4	125	5	3	125

° No back-up fuse required, since short-circuit resistant up to 100 kA

1) 10 % overvoltage.

2) 5 % overvoltage.

3) Back-up fuse only required if the short-circuit current at the place of installation > I_{cu} .

4) Alternatively, fuseless limiter combinations for 690 V AC can also be used.

SIRIUS 3RV6/3RV5 Motor Starter Protectors/Circuit Breakers

General data

Short-circuit breaking capacity I_{cuIT} in the IT system (IT network) according to IEC 60947-2

3RV6/3RV5 motor starter protectors/circuit breakers are suitable for use in IT systems. The values of I_{cu} and I_{cs} apply for the three-pole short circuit. In case of a double ground fault in different phases at the input and output side of a motor starter protector, the special short-circuit breaking capacity I_{cuIT} applies. The specifications in the table below apply to 3RV6/3RV5 motor starter protectors/circuit breakers.

If the short-circuit current at the place of installation exceeds the motor starter protector/circuit breaker's specified rated short-circuit breaking capacity, you will need to use a back-up fuse. The maximum rated current of this back-up fuse is indicated in the tables. The rated short-circuit breaking capacity then applies as specified on the fuse.

Motor starter protectors/ circuit breakers	Rated current I_n	Up to 240 V AC ¹⁾		Up to 400 V AC ^{1)/415 V AC²⁾}		Up to 500 V AC ^{1)/525 V AC²⁾}		Up to 690 V AC ¹⁾⁵⁾	
		I_{cuIT}	Max. fuse (gG) ³⁾	I_{cuIT}	Max. fuse (gG) ³⁾⁴⁾	I_{cuIT}	Max. fuse (gG) ³⁾	I_{cuIT}	Max. fuse (gG) ³⁾
Type	A	kA	A	kA	A	kA	A	kA	A
Size S00									
3RV6.11	0.16 ... 0.4	100	°	100	°	100	°	100	°
	0.5	100	°	100	°	100	°	0.5	4
	0.63; 0.8	100	°	100	°	100	°	0.5	6
	1	100	°	100	°	8	10	2	10
	1.25	100	°	100	°	8	16	2	16
	1.6	100	°	100	°	8	20	2	16
	2; 2.5	100	°	8	25	8	25	2	20
	3.2	100	°	8	32	8	32	2	25
	4; 5	100	°	4	32	2	32	2	25
	6.3; 8	100	°	4	50	2	40	1.5	35
	10	100	°	4	50	2	40	1.5	40
	12.5	100	°	4	63	2	50	1.5	40
	16	55	80	4	63	2	50	1.5	40
Size S0									
3RV6.21	16	55	80	4	63	2	50	1.5	40
	20 ... 25	55	80	4	63	2	50	1.5	50
	28; 32	55	80	2	63	2	63	1.5	63
	36; 40	20	80	2	63	2	63	1.5	63
Size S2									
3RV5.31	16	50	100	8	100	6	80	5	63
	20; 25	50	125	8	100	6	80	5	63
	32	50	125	6	125	4	100	3	80
	40 ... 50	50	160	6	125	4	100	3	80
Size S3									
3RV5.41	40	50	125	10	63	5	50	5	50
	50	50	125	8	80	3	63	3	63
	63	50	160	6	80	3	63	3	63
	75	50	160	5	100	2	80	2	80
	90; 100	50	160	5	125	2	100	2	100

° No back-up fuse required, since short-circuit resistant up to 100 kA

1) 10 % overvoltage.

2) 5 % overvoltage.

3) Back-up fuse only required if short-circuit current at the place of installation $> I_{cuIT}$.

4) Alternatively, fuseless limiter combinations for 690 V AC can also be used.

5) Overvoltage category II applies for applications in IT systems > 600 V.

SIRIUS 3RV6/3RV5 Motor Starter Protectors/Circuit Breakers

General data

1

Permissible rated data of devices approved for North America (UL/CSA)

Motor starter protectors of the 3RV6/3RV5 series are approved for UL/CSA, and according to UL508 and CSA C22.2 No. 14, they can be used on their own or as load feeders in combination with a contactor.

These motor starter protectors can be used as "Manual Motor Controllers" for "Group Installations", as "Manual Motor Controllers Suitable for Tap Conductor Protection in Group Installations" and as "Self-Protected Combination Motor Controllers" (Type E).

3RV6/3RV5 motor starter protectors as "Manual Motor Controllers"

If used as a "Manual Motor Controller", the motor starter protector is always operated in combination with an upstream short-circuit protection device. Approved fuses or circuit breakers according to UL 489/CSA C22.2 No. 5 can be used. These devices must be dimensioned according to the National Electrical Code (UL) or Canadian Electrical Code (CSA).

The file numbers for the approval of the 3RV6 as a Manual Motor Controller are as follows:

- UL File No. 47705, CCN: NLRV
- CSA Master Contract 165071, Product Class: 3211 05

Motor starter protectors		hp rating ¹⁾ for FLA ²⁾ max.		Rated current I_n	240 V AC		480 V AC		600 V AC	
Type	V	Single-phase	3-phase	A	UL $I_{bc}^{(3)}$ kA	CSA $I_{bc}^{(3)}$ kA	UL $I_{bc}^{(3)}$ kA	CSA $I_{bc}^{(3)}$ kA	UL $I_{bc}^{(3)}$ kA	CSA $I_{bc}^{(3)}$ kA
Size S00										
3RV6011, 3RV6311, 3RV6411				0.16 ... 12.5 16	65 65	65 65	65 65	65 65	30 --	30 --
FLA ²⁾ max.	115	1	2							
16 A, 480 V;	200	2	3							
12.5 A, 600 V	230	2	5							
	460	--	10							
	575/600	--	10							
Size S0										
3RV6021, 3RV6321, 3RV6421				0.16 ... 12.5 16 ... 25	65 65	65 65	65 65	65 65	30 --	30 --
FLA ²⁾ max.	115	3	5							
40 A, 480 V;	200	5	10	28, 32	65	65	50	50	--	--
12.5 A, 600 V	230	7 1/2	10	36, 40	65	65	12	12	--	--
	460	--	30							
	575/600	--	--							
Size S2										
3RV5031, 3RV5331				16 ... 50	65	65	65	65	25	25
FLA ²⁾ max.	115	3	--							
50 A, 600 V	200	7 1/2	15							
	230	10	20							
NEMA size 2	460	--	40							
	575/600	--	50							
Size S3										
3RV5041/3RV5042, 3RV5142, 3RV5341/3RV5342				16 ... 75 90; 100	65 65	65 65	65 65	65 65	30 10	30 10
FLA ²⁾ max.	115	7 1/2	--							
99 A, 600 V	200	20	30							
	230	20	40							
NEMA size 3	460	--	75							
	575/600	--	100							

-- No approval

¹⁾ hp rating = Power rating in horse power (maximum motor rating).

²⁾ FLA = Full Load Amps/motor full load current.

³⁾ Corresponds to "short-circuit breaking capacity" according to UL/CSA.

SIRIUS 3RV6/3RV5 Motor Starter Protectors/Circuit Breakers

General data

3RV60/3RV50 motor starter protectors (up to 100 A) as "Manual Motor Controller Suitable for Tap Conductor Protection in Group Installations"

The application as "Manual Motor Controllers Suitable for Tap Conductor Protection in Group Installations" is only available for UL.

CSA does not recognize this approval! When the motor starter protector is used as a "Manual Motor Controller Suitable for Tap Conductor Protection in Group Installations", it must always be combined with upstream short-circuit protection. Approved fuses or a circuit breaker according to UL 489 can be used.

These devices must be dimensioned according to the National Electrical Code.

The 3RV60/3RV50 motor starter protectors are approved as "Manual Motor Controllers Suitable for Tap Conductor Protection in Group Installations" under the following file number:

- UL File No. 47705, CCN: NLRV

Motor starter protectors		hp rating ¹⁾ for FLA ²⁾ max.		Rated current I_n	240 V AC UL I_{bc} ³⁾ kA	Up to 480 Y/277 V AC UL I_{bc} ³⁾ kA	Up to 600 Y/347 V AC UL I_{bc} ³⁾ kA
Type	V	Single-phase	3-phase	A			
Size S00							
3RV6011				0.16 ... 12.5 16	65 65	65 65	30 --
FLA ²⁾ max.	115	1	2				
16 A, 480 V	200	2	3				
12.5 A, 600 V	230	2	5				
	460	--	10				
	575/600	--	10				
Size S0							
3RV6021				0.16 ... 12.5 16 ... 25 28; 32	65 65 50	65 65 50	30 -- --
FLA ²⁾ max.	115	2	5				
32 A, 480 V	200	3	7 1/2				
	230	5	10				
	460	--	20				
	575/600	--	--				
Size S2							
3RV5031				16 ... 50	65	65	25
FLA ²⁾ max.	115	3	--				
50 A, 600 V	200	7 1/2	15				
	230	10	20				
NEMA size 2	460	--	40				
	575/600	--	50				
Size S3							
3RV504.				16 ... 75 90; 100	65 65	65 65	30 --
FLA ²⁾ max.	115	7 1/2	--				
100 A, 480 V	200	20	30				
75 A, 600 V	230	20	40				
	460	--	75				
NEMA size 3	575/600	--	75				

-- No approval

¹⁾ hp rating = Power rating in horse power (maximum motor rating).

²⁾ FLA = Full Load Amps/motor full load current.

³⁾ Corresponds to "short-circuit breaking capacity" according to UL.

SIRIUS 3RV6/3RV5 Motor Starter Protectors/Circuit Breakers

General data

1

3RV60/3RV50 motor starter protectors (up to 100 A) as "Self-Protected Combination Motor Controller (Type E)"

UL 508 approval demands 1-inch clearance and 2-inch creepage distance at line side for "Self-Protected Combination Motor Controller Type E".

Therefore, 3RV60 motor starter protectors of size S00 and S0 are approved according to UL 508 in combination with the terminal blocks listed below.

The 3RV50 motor starter protectors in size S2 conform with the required clearance and creepage distances without a terminal block. With size S3, these terminal blocks cannot be used in combination with a transverse auxiliary switch.

CSA does not require these extended clearances and creepage distances. According to CSA, these terminal blocks can be omitted when the device is used as a "Self-Protected Combination Motor Controller".

The 3RV60/3RV50 motor starter protectors are approved as "Self-Protected Combination Motor Controllers" under the following file numbers:

- UL File No. E156943, CCN: NKJH
- CSA Master Contract 165071, Product Class: 3211 08

Motor starter protectors		hp rating ¹⁾ for FLA ²⁾ max.		Rated current I_n	Up to 240 V AC		Up to 480 V/277 V AC		Up to 600 V/347 V AC	
Type	V	Single-phase	3-phase	A	UL $I_{bc}^{(3)}$ kA	CSA $I_{bc}^{(3)}$ kA	UL $I_{bc}^{(3)}$ kA	CSA $I_{bc}^{(3)}$ kA	UL $I_{bc}^{(3)}$ kA	CSA $I_{bc}^{(3)}$ kA
Size S00										
3RV6011 + 3RV2928-1H⁴⁾⁵⁾					0.16 ... 12.5 16	65 65	65 65	65 65	30 --	30 --
FLA ²⁾ max.	115	1	2							
16 A, 480 V	200	2	3							
12.5 A, 600 V	230	2	5							
	460	--	10							
	575/600	--	10							
Size S0										
3RV6021 + 3RV2928-1H⁴⁾⁵⁾					0.16 ... 12.5 16 ... 25 28; 32	65 65 50	65 65 50	65 65 50	30 -- --	30 -- --
FLA ²⁾ max.	115	2	5							
32 A, 480 V	200	3	7 1/2							
	230	5	10							
	460	--	20							
	575/600	--	--							
Size S2										
3RV5031					16 ... 50	65	65	65	25	25
FLA ²⁾ max.	115	3	--							
50 A, 600 V	200	7 1/2	15							
NEMA size 2	230	10	20							
	460	--	40							
	575/600	--	50							
Size S3										
3RV5041 + 3RT1946-4GAA07⁴⁾⁶⁾					16 ... 75 90; 100	65 65	65 65	65 65	30 --	30 --
FLA ²⁾ max.	115	10	--							
100 A, 480 V	200	20	30							
75 A, 600 V	230	20	40							
	460	--	75							
NEMA size 3	575/600	--	75							

-- No approval

¹⁾ hp rating = Power rating in horse power (maximum motor rating).

²⁾ FLA = Full Load Amps/motor full load current.

³⁾ Corresponds to "short-circuit breaking capacity" according to UL/CSA.

⁴⁾ Not required for CSA.

⁵⁾ Alternatively, the 3RV2928-1K can also be used. Part of Catalog IC10.

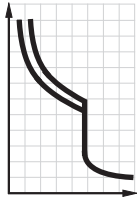
⁶⁾ 3RT1946-4GAA07 as replacement to the standard terminal box. Part of Catalog IC10.

SIRIUS 3RV6/3RV5 Motor Starter Protectors/Circuit Breakers

For motor protection

Selection and ordering data

CLASS 10, screw terminals, with or without auxiliary switches



3RV6011-..A1.



3RV6021-4.A1.



3RV5031-4.A10



3RV6021-4.A10

Rated current	Suitable for three-phase motors ¹⁾ with P	Setting range for thermal overload release	Instantaneous overcurrent release	Short-circuit breaking capacity at 400 V AC	Without auxiliary switch	With transverse auxiliary switch (1 NO + 1 NC)
I_n				I_{cu}	Article No.	Article No.
A	kW	A	A	kA		
Size S00						
0.16	0.04	0.11 ... 0.16	2.1	100	3RV6011-0AA10	3RV6011-0AA15
0.2	0.06	0.14 ... 0.2	2.6	100	3RV6011-0BA10	3RV6011-0BA15
0.25	0.06	0.18 ... 0.25	3.3	100	3RV6011-0CA10	3RV6011-0CA15
0.32	0.09	0.22 ... 0.32	4.2	100	3RV6011-0DA10	3RV6011-0DA15
0.4	0.09	0.28 ... 0.4	5.2	100	3RV6011-0EA10	3RV6011-0EA15
0.5	0.12	0.35 ... 0.5	6.5	100	3RV6011-0FA10	3RV6011-0FA15
0.63	0.18	0.45 ... 0.63	8.2	100	3RV6011-0GA10	3RV6011-0GA15
0.8	0.18	0.55 ... 0.8	10	100	3RV6011-0HA10	3RV6011-0HA15
1	0.25	0.7 ... 1	13	100	3RV6011-0JA10	3RV6011-0JA15
1.25	0.37	0.9 ... 1.25	16	100	3RV6011-0KA10	3RV6011-0KA15
1.6	0.55	1.1 ... 1.6	21	100	3RV6011-1AA10	3RV6011-1AA15
2	0.75	1.4 ... 2	26	100	3RV6011-1BA10	3RV6011-1BA15
2.5	0.75	1.8 ... 2.5	33	100	3RV6011-1CA10	3RV6011-1CA15
3.2	1.1	2.2 ... 3.2	42	100	3RV6011-1DA10	3RV6011-1DA15
4	1.5	2.8 ... 4	52	100	3RV6011-1EA10	3RV6011-1EA15
5	1.5	3.5 ... 5	65	100	3RV6011-1FA10	3RV6011-1FA15
6.3	2.2	4.5 ... 6.3	82	100	3RV6011-1GA10	3RV6011-1GA15
8	3	5.5 ... 8	104	100	3RV6011-1HA10	3RV6011-1HA15
10	4	7 ... 10	130	100	3RV6011-1JA10	3RV6011-1JA15
12.5	5.5	9 ... 12.5	163	100	3RV6011-1KA10	3RV6011-1KA15
16	7.5	11 ... 16	208	55	3RV6011-4AA10	3RV6011-4AA15
Size S0						
16	7.5	11 ... 16	208	55	3RV6021-4AA10	3RV6021-4AA15
20	7.5	14 ... 20	260	55	3RV6021-4BA10	3RV6021-4BA15
22	11	17 ... 22	286	55	3RV6021-4CA10	3RV6021-4CA15
25	11	20 ... 25	325	55	3RV6021-4DA10	3RV6021-4DA15
28	15	23 ... 28	364	55	3RV6021-4NA10	3RV6021-4NA15
32	15	27 ... 32	400	55	3RV6021-4EA10	3RV6021-4EA15
36 ²⁾	18.5	30 ... 36	432	20	3RV6021-4PA10	3RV6021-4PA15
40 ²⁾	18.5	34 ... 40	480	20	3RV6021-4FA10	3RV6021-4FA15
Size S2						
16	7.5	11 ... 16	208	50	3RV5031-4AA10	--
20	7.5	14 ... 20	260	50	3RV5031-4BA10	--
25	11	18 ... 25	325	50	3RV5031-4DA10	--
32	15	22 ... 32	416	50	3RV5031-4EA10	--
40	18.5	28 ... 40	520	50	3RV5031-4FA10	--
45	22	36 ... 45	585	50	3RV5031-4GA10	--
50	22	40 ... 50	650	50	3RV5031-4HA10	--
Size S3						
40	18.5	28 ... 40	520	50	3RV5041-4FA10	--
50	22	36 ... 50	650	50	3RV5041-4HA10	--
63	30	45 ... 63	819	50	3RV5041-4JA10	--
75	37	57 ... 75	975	50	3RV5041-4KA10	--
90	45	70 ... 90	1 170	50	3RV5041-4LA10	--
100	45	80 ... 100	1 235	50	3RV5041-4MA10	--

¹⁾ Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

²⁾ The devices must not be mounted side-by-side and they must not be assembled with link modules with contactors. A lateral clearance of 9 mm is required.

Auxiliary switches and other accessories can be ordered separately (see "Accessories" on page 1/14 onwards).

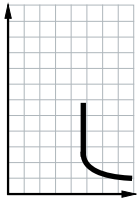
SIRIUS 3RV6/3RV5 Motor Starter Protectors/Circuit Breakers

For starter combinations

1

Selection and ordering data

Screw terminals, without auxiliary switches



3RV6311-..C10



3RV6321-4.C10



3RV5331-4.C10



3RV5341-4.C10

Rated current I_n A	Suitable for three-phase motors ¹⁾ with P kW	Thermal overload release ²⁾  A	Instantaneous overcurrent release  A	Short-circuit breaking capacity at 400 V AC I_{cu} kA	Article No.
Size S00					
0.16	0.04	Without	2.1	100	3RV63 11-0AC10
0.2	0.06	Without	2.6	100	3RV6311-0BC10
0.25	0.06	Without	3.3	100	3RV6311-0CC10
0.32	0.09	Without	4.2	100	3RV6311-0DC10
0.4	0.09	Without	5.2	100	3RV6311-0EC10
0.5	0.12	Without	6.5	100	3RV6311-0FC10
0.63	0.18	Without	8.2	100	3RV6311-0GC10
0.8	0.18	Without	10	100	3RV6311-0HC10
1	0.25	Without	13	100	3RV6311-0JC10
1.25	0.37	Without	16	100	3RV6311-0KC10
1.6	0.55	Without	21	100	3RV6311-1AC10
2	0.75	Without	26	100	3RV6311-1BC10
2.5	0.75	Without	33	100	3RV6311-1CC10
3.2	1.1	Without	42	100	3RV6311-1DC10
4	1.5	Without	52	100	3RV6311-1EC10
5	1.5	Without	65	100	3RV6311-1FC10
6.3	2.2	Without	82	100	3RV6311-1GC10
8	3	Without	104	100	3RV6311-1HC10
10	4	Without	130	100	3RV6311-1JC10
12.5	5.5	Without	163	100	3RV6311-1KC10
16	7.5	Without	208	55	3RV6311-1AC10
Size S0					
16	7.5	Without	208	55	3RV6321-4AC10
20	7.5	Without	260	55	3RV6321-4BC10
22	11	Without	286	55	3RV6321-4CC10
25	11	Without	325	55	3RV6321-4DC10
28	15	Without	364	55	3RV6321-4NC10
32	15	Without	400	55	3RV6321-4EC10
36 ³⁾	18.5	Without	432	20	3RV6321-4PC10
40 ³⁾	18.5	Without	480	20	3RV6321-4FC10
Size S2					
16	7.5	Without	208	50	3RV5331-4AC10
20	7.5	Without	260	50	3RV5331-4BC10
25	11	Without	325	50	3RV5331-4DC10
32	15	Without	416	50	3RV5331-4EC10
40	18.5	Without	520	50	3RV5331-4FC10
45	22	Without	585	50	3RV5331-4GC10
50	22	Without	650	50	3RV5331-4HC10
Size S3					
40	18.5	Without	520	50	3RV5341-4FC10
50	22	Without	650	50	3RV5341-4HC10
63	30	Without	819	50	3RV5341-4JC10
75	37	Without	975	50	3RV5341-4KC10
90	45	Without	1 170	50	3RV5341-4LC10
100	45	Without	1 235	50	3RV5341-4MC10

¹⁾ Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

²⁾ For overload protection of the motors, appropriate overload relays must be used.

³⁾ The devices must not be mounted side-by-side and they must not be assembled with link modules with contactors. A lateral clearance of 9 mm is required.

Auxiliary switches and other accessories can be ordered separately (see "Accessories" on page 1/14 onwards).

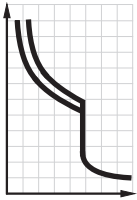
SIRIUS 3RV6/3RV5 Motor Starter Protectors/Circuit Breakers

For transformer protection

Selection and ordering data

CLASS 10, screw terminals, without auxiliary switches

Motor starter protectors for the protection of transformers with high inrush current



3RV6411-...A10

3RV6421-4.A10

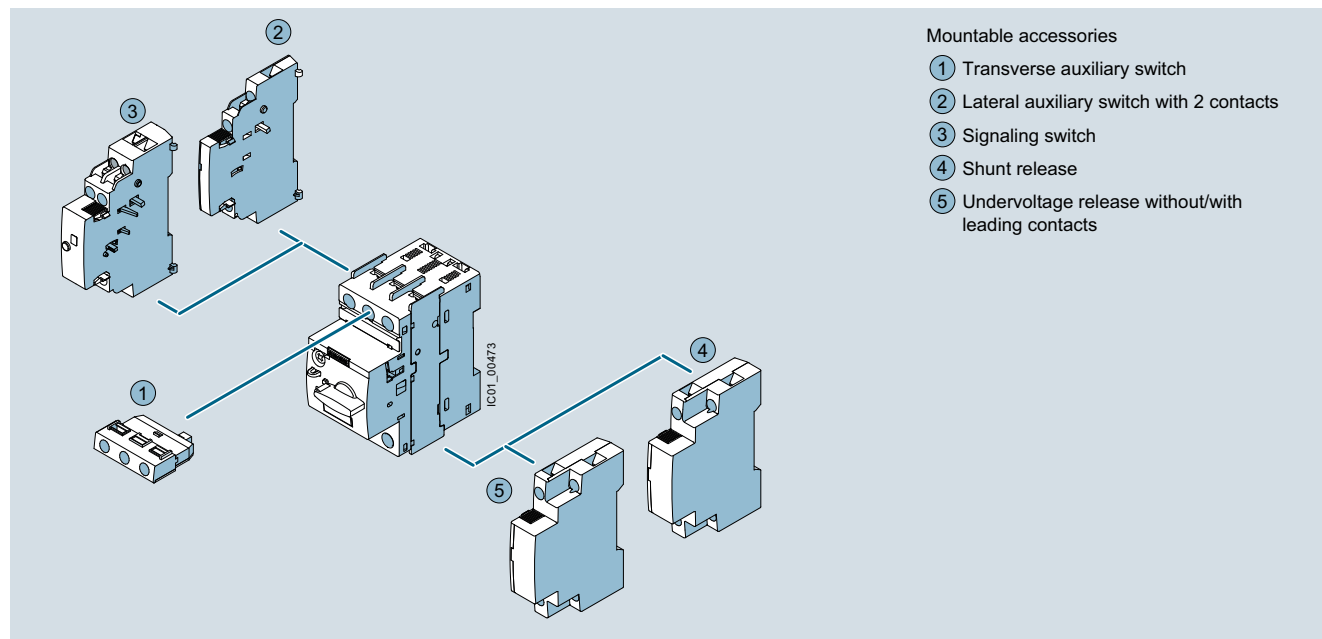
3RV5431-4.A10

Rated current I_n A	Setting range for thermal overload release A	Instantaneous overcurrent release A	Short-circuit breaking capacity at 400 V AC I_{cu} kA	Article No.
Size S00				
0.16	0.11 ... 0.16	3.3	100	3RV6411-0AA10
0.2	0.14 ... 0.2	4.2	100	3RV6411-0BA10
0.25	0.18 ... 0.25	5.2	100	3RV6411-0CA10
0.32	0.22 ... 0.32	6.5	100	3RV6411-0DA10
0.4	0.28 ... 0.4	8.2	100	3RV6411-0EA10
0.5	0.35 ... 0.5	10	100	3RV6411-0FA10
0.63	0.45 ... 0.63	13	100	3RV6411-0GA10
0.8	0.55 ... 0.8	16	100	3RV6411-0HA10
1	0.7 ... 1	21	100	3RV6411-0JA10
1.25	0.9 ... 1.25	26	100	3RV6411-0KA10
1.6	1.1 ... 1.6	33	100	3RV6411-1AA10
2	1.4 ... 2	42	100	3RV6411-1BA10
2.5	1.8 ... 2.5	52	100	3RV6411-1CA10
3.2	2.2 ... 3.2	65	100	3RV6411-1DA10
4	2.8 ... 4	82	100	3RV6411-1EA10
5	3.5 ... 5	104	100	3RV6411-1FA10
6.3	4.5 ... 6.3	130	100	3RV6411-1GA10
8	5.5 ... 8	163	100	3RV6411-1HA10
10	7 ... 10	208	100	3RV6411-1JA10
12.5	9 ... 12.5	260	100	3RV6411-1KA10
16	11 ... 16	286	55	3RV6411-4AA10
Size S0				
16	11 ... 16	286	55	3RV6421-4AA10
20	14 ... 20	325	55	3RV6421-4BA10
22	17 ... 22	364	55	3RV6421-4CA10
25	20 ... 25	400	55	3RV6421-4DA10
Size S2				
16	11 ... 16	325	50	3RV5431-4AA10
20	14 ... 20	416	50	3RV5431-4BA10
25	18 ... 25	520	50	3RV5431-4DA10
32	22 ... 32	660	50	3RV5431-4EA10
40	28 ... 40	836	50	3RV5431-4FA10

Auxiliary switches and other accessories can be ordered separately (see "Accessories" on page 1/14 onwards).

Overview

The following illustration shows our 3RV6 motor starter protector/circuit breaker with the accessories which can be mounted for the sizes S00 and S0, [see also "Introduction" → "Overview", page 1/2.](#)



Mountable accessories for SIRIUS 3RV6 motor starter protectors/circuit breakers

SIRIUS 3RV6/3RV5 Motor Starter Protectors/Circuit Breakers

Accessories

Mountable accessories

Selection and ordering data

Version		For motor starter protectors/ circuit breakers	Article No.			
		Size				
Auxiliary switches ¹⁾						
 3RV6901-1E	Transverse auxiliary switches for front mounting					
	1 CO 1 NO + 1 NC ²⁾ 2 NO	S00, S0	3RV6901-1D 3RV6901-1E 3RV6901-1F			
 3RV5901-1E	1 CO 1 NO + 1 NC ²⁾ 2 NO	S2, S3	3RV5901-1D 3RV5901-1E 3RV5901-1F			
	Lateral auxiliary switches mountable on the left					
 3RV6901-1A	1 NO + 1 NC ²⁾ 2 NO 2 NC	S00, S0	3RV6901-1A 3RV6901-1B 3RV6901-1C			
	1 NO + 1 NC 2 NO	S2, S3	3RV5901-1A 3RV5901-1B			
Signaling switches						
 3RV6921-1M	Signaling switches	S00, S0	3RV6921-1M			
	One signaling switch can be mounted on the left per motor starter protector. Separate tripped and short-circuit alarms, 1 NO + 1 NC each	S2, S3	3RV5921-1M			
Rated control supply voltage U_s		For motor starter protectors/ circuit breakers	Article No.			
AC 50 Hz	AC 60 Hz	AC 50/60 Hz	AC/DC 50/60 Hz, DC 5 s ON period ³⁾			
V	V	V	V			
		100 % ON period ²⁾				
		5 s ON period ³⁾				
		DC				
		Size				
Auxiliary releases ⁴⁾						
 3RV6902-1A.0	Undervoltage releases					
	230	240	--	--	S00, S0	3RV6902-1AP0
	400	440	--	--	S00, S0	3RV6902-1AV0
	230	240	--	--	S2, S3	3RV5902-1AP0
	400	440	--	--	S2, S3	3RV5902-1AV0
	Shunt releases					
	--	--	20 ... 24	20 ... 70	S00, S0	3RV6902-1DB0
	--	--	210 ... 240	190 ... 330	S00, S0	3RV6902-1DP0
	--	--	350 ... 415	330 ... 500	S00, S0	3RV6902-1DV0
	--	--	20 ... 24	20 ... 70	S2, S3	3RV5902-1DB0
	--	--	210 ... 240	190 ... 330	S2, S3	3RV5902-1DP0
	--	--	350 ... 415	330 ... 500	S2, S3	3RV5902-1DV0

¹⁾ Each motor starter protector/circuit breaker can be fitted with one transverse and one lateral auxiliary switch.

²⁾ The voltage range is valid for 100 % (infinite) ON period. The response voltage lies at 0.9 of the lower limit of the voltage range.

³⁾ The voltage range is valid for 5 s ON period at AC 50/60Hz and DC. The response voltage lies at 0.85 of the lower limit of the voltage range.

⁴⁾ One auxiliary release can be mounted on the right per motor starter protector.

SIRIUS 3RV6/3RV5 Motor Starter Protectors/Circuit Breakers
Accessories

Mounting accessories

1

Selection and ordering data

Version	For motor starter protectors/ circuit breakers	Article No.
	Size	

Fixing accessories



3RV6928-0B

Push-in lugs
For screwing the motor starter protector/circuit breaker onto mounting plates
For each motor starter protector/circuit breaker, two units are required.

S00, S0

3RV6928-0B

SIRIUS 3RV6/3RV5 Motor Starter Protectors/Circuit Breakers

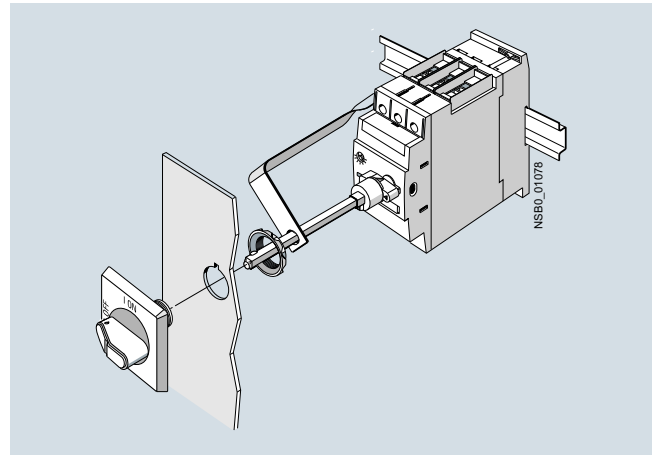
Accessories

Rotary operating mechanisms

Overview

Door-coupling rotary operating mechanisms

Motor starter protectors/circuit breakers with a rotary operating mechanism can be mounted in a control cabinet and operated externally by means of a door-coupling rotary operating mechanism. When the cabinet door with motor starter protector/circuit breaker is closed, the operating mechanism is coupled. When the motor starter protector/circuit breaker closes, the coupling is locked which prevents the door from being opened unintentionally. This interlock can be defeated by the maintenance personnel. In the OPEN position, the rotary operating mechanism can be secured against reclosing with up to three padlocks. Inadvertent opening of the door is not possible in this case either.



SIRIUS 3RV6926-0K door-coupling rotary operating mechanism

Selection and ordering data

Version	Color of handle	Version of extension shaft mm	For MSPs/ circuit breakers Size	Article No.
---------	-----------------	----------------------------------	---------------------------------------	-------------

Door-coupling rotary operating mechanisms



3RV6926-0B

The door-coupling rotary operating mechanisms consist of a knob, a coupling driver and a 130/330 mm long extension shaft (6 mm x 6 mm).

The door-coupling rotary operating mechanisms are designed to degree of protection IP64. The door locking device prevents accidental opening of the control cabinet door in the ON position of the motor starter protector/circuit breaker. The OFF position can be locked with up to three padlocks.

Door-coupling rotary operating mechanisms

Black

130

330

S00, S0, S2, S3

S00, S0, S2, S3

3RV6926-0B

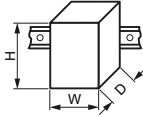
3RV6926-0K

SIRIUS 3RV6/3RV5 Motor Starter Protectors/Circuit Breakers

Technical specifications

1

Technical specifications

General data							
Type			3RV6.1.	3RV6.2.	3RV5.3.	3RV5.4.	
Size			S00	S0	S2	S3	
Dimensions (W x H x D)	 mm		45 x 97 x 91	45 x 97 x 91	55 x 140 x 144	70 x 165 x 169	
Standards							
• IEC 60947-1, EN 60947-1 (VDE 0660 Part 100)			Yes				
• IEC 60947-2, EN 60947-2 (VDE 0660 Part 101)			Yes				
• IEC 60947-4-1, EN 60947-4-1 (VDE 0660 Part 102)			Yes				
• UL 508, CSA C22.2 No.14			Yes				
Number of poles			3				
Max. rated current $I_{n \max}$ (= max. rated operational current I_e)			A	16	40	50	100
Permissible ambient temperature							
• Storage/transport			°C	–50 ... +80			
• Operation			°C	–20 ... +70 (current reduction above +60 °C)			
			°C	–20 ... +40 ¹⁾			
				–20 ... +70 (current reduction above +60 °C)			
Permissible rated current at inside temperature of control cabinet							
• +60 °C			%	100			
• +70 °C			%	87			
Permissible rated current at ambient temperature of enclosure (applies for motor starter protector/circuit breaker inside enclosure)							
• +35 °C			%	100			
• +60 °C			%	87			
Rated operational voltage U_e							
• Acc. to IEC			V AC	690 (with molded-plastic enclosure 500 V)			
• Acc. to UL/CSA			V AC	600			
Rated frequency			Hz	50/60			
Rated insulation voltage U_i			V	690			
Rated impulse withstand voltage U_{imp}			kV	6			
Utilization category							
• IEC 60947-2 (motor starter protector/circuit breaker)			A				
• IEC 60947-4-1 (motor starter)			AC-3				
Trip class CLASS			Acc. to IEC 60947-4-1	10	10	10	
DC short-circuit breaking capacity (time constant $t = 5$ ms)							
• 1 conducting path 150 V DC			kA	10			
• 2 conducting paths in series 300 V DC			kA	10			
• 3 conducting paths in series 450 V DC			kA	10			
Power loss P_v for each motor starter protector/circuit breaker							
Dependent on the rated current I_n (upper setting range)			I_n : 0.16 ... 0.63 A	W	5		
			I_n : 0.8 ... 6.3 A	W	6		
			I_n : 8 ... 16 A	W	7		
			I_n : 16 A	W	--		
			I_n : 20 ... 25 A	W	7		
			I_n : 28 ... 32 A	W	8		
			I_n : 36 ... 40 A	W	11		
			I_n : 16 ... 25 A	W	14		
			I_n : 32 A	W	--		
			I_n : 40 ... 50 A	W	12		
			I_n : 16 ... 63 A	W	15		
			I_n : 75 and 90 A	W	20		
			I_n : 100 A	W	--		
					20		
					30		
					38		
Shock resistance			Acc. to IEC 60068-2-27	g/ms	25/11 (square and sine pulse)		
Degree of protection			Acc. to IEC 60529				
Touch protection			IP20 Finger-safe for vertical contact from the front				
Temperature compensation			Acc. to IEC 60947-4-1	°C	–20 ... +60		
Phase failure sensitivity			Acc. to IEC 60947-4-1				
Isolating function			Acc. to IEC 60947-2				
Main and EMERGENCY-STOP switch characteristics (with corresponding accessories)			Acc. to EN 60204-1				
Protective separation between main and auxiliary circuits, required for PELV applications			Acc. to IEC 60947-1				
• Up to 400 V + 10 %			Yes				
• Up to 415 V + 5 % (higher voltages on request)			Yes				
Permissible mounting position			Any, acc. to IEC 60447 start command "I" right-hand side or top				
Mechanical endurance			Operating cycles	100 000	50 000		
Electrical endurance			Operating cycles	100 000	25 000		
Max. switching frequency per hour (motor starts)			1/h	15			

¹⁾ The devices must not be mounted side-by-side and they must not be assembled with link modules with contactors. A lateral clearance of 9 mm is required.

SIRIUS 3RV6/3RV5 Motor Starter Protectors/Circuit Breakers

Technical specifications

Conductor cross-sections of main circuit					
Type		3RV6.1	3RV6.2	3RV5.3.	3RV5.4
Size		S00	S0	S2	S3
Connection type		 Screw terminals			
Terminal screw		M3, Pozidriv size 2	M4, Pozidriv size 2	Pozidriv size 2	4 mm hexagon socket screw
Operating devices		mm	Ø 5 ... 6	Ø 5 ... 6	
Prescribed tightening torque		Nm	0.8 ... 1.2	2 ... 2.5	3 ... 4.5
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected					
• Solid	mm ²	2 x (0.75 ... 2.5) ¹⁾ , 2 x 4	2 x (1 ... 2.5) ¹⁾ , 2 x (2.5 ... 10) ¹⁾	2 x (0.75 ... 16)	2 x (2.5 ... 16)
• Stranded	mm ²	2 x (0.75 ... 2.5) ¹⁾ , 2 x 4	2 x (1 ... 2.5) ¹⁾ , 2 x (2.5 ... 10) ¹⁾	2 x (0.75 ... 25), 1 x (0.75 ... 35)	2 x (10 ... 50), 1 x (10 ... 70)
• Finely stranded with end sleeves (DIN 46228-1)	mm ²	2 x (0.5 ... 1.5) ¹⁾ , 2 x (0.75 ... 2.5) ¹⁾	2 x (1 ... 2.5) ¹⁾ , 2 x (2.5 ... 6) ¹⁾ , 1 x 10	2 x (0.75 ... 16), 1 x (0.75 ... 25)	2 x (2.5 ... 35), 1 x (2.5 ... 50)
• AWG cables, solid or stranded	AWG	2 x (20 ... 16) ¹⁾ , 2 x (18 ... 12) ¹⁾	2 x (16 ... 12) ¹⁾ , 2 x (14 ... 8) ¹⁾	2 x (18 ... 2), 1 x (18 ... 2)	2 x (10 ... 1/0), 1 x (10 ... 2/0)
Ribbon cable conductors (Number x Width x Thickness)		mm	2 x (6 x 9 x 0.8)		
Removable box terminals ²⁾					
• With copper bars ³⁾		--	18 x 10		
• With cable lugs ⁴⁾		--	up to 2 x 70		
Conductor cross-sections for auxiliary and control circuits					
Connection type		 Screw terminals			
Terminal screw		M3, Pozidriv size 2			
Operating devices		mm	Ø 5 ... 6		
Prescribed tightening torque		Nm	0.8 ... 1.2		
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected					
• Solid or stranded	mm ²	2 x (0.5 ... 1.5) ¹⁾ , 2 x (0.75 ... 2.5) ¹⁾			
• Finely stranded with end sleeves (DIN 46228-1)	mm ²	2 x (0.5 ... 1.5) ¹⁾ , 2 x (0.75 ... 2.5) ¹⁾			
• AWG cables, solid or stranded	AWG	2 x (18 ... 14) ¹⁾ , 2 x (20 ... 16) ¹⁾		2 x (18 ... 14)	

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

²⁾ Cable lug and busbar connection possible after removing the box terminals.

³⁾ If bars larger than 12 mm x 10 mm are connected, a 3RT1946-4EA1 cover is needed to comply with the phase clearance. Part of Catalog IC10.

⁴⁾ When connecting conductors which are larger than 25 mm², the 3RT1946-4EA1 cover must be used to keep the phase clearance. Part of Catalog IC10.

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

²⁾ Cable lug and busbar connection possible after removing the box terminals.

³⁾ If bars larger than 12 mm x 10 mm are connected, a 3RT1946-4EA1 cover is needed to comply with the phase clearance. Part of Catalog IC10.

⁴⁾ When connecting conductors which are larger than 25 mm², the 3RT1946-4EA1 cover must be used to keep the phase clearance. Part of Catalog IC10.

SIRIUS 3RV6/3RV5 Motor Starter Protectors/Circuit Breakers

Technical specifications

1

Front transverse auxiliary switches

	Switching capacity for different voltages	
	1 CO	1 NO + 1 NC, 2 NO
Rated operational current I_e		
• At AC-15, alternating voltage		
- 24 V	A 4	2
- 230 V	A 3	0.5
• At AC-12 = I_{th} , alternating voltage		
- 24 V	A 10	2.5
- 230 V	A 10	2.5
• At DC-13, direct voltage L/R 200 ms		
- 24 V	A 1	1
- 48 V	A --	0.3
- 60 V	A --	0.15
- 110 V	A 0.22	--
- 220 V	A 0.1	--
Minimum load capacity	V 17	
	mA 1	

Lateral auxiliary switches with signaling switch

	Switching capacity for different voltages:	
	Lateral auxiliary switch with 1 NO + 1 NC, 2 NO, 2 NC Signaling switch	
Rated operational current I_e		
• At AC-15, alternating voltage		
- 24 V	A 6	
- 230 V	A 4	
- 400 V	A 3	
- 690 V	A 1	
• At AC-12 = I_{th} , alternating voltage		
- 24 V	A 10	
- 230 V	A 10	
- 400 V	A 10	
- 690 V	A 10	
• At DC-13, direct voltage L/R 200 ms		
- 24 V	A 2	
- 110 V	A 0.5	
- 220 V	A 0.25	
- 440 V	A 0.1	
Minimum load capacity	V 17	
	mA 1	

Auxiliary releases

		Undervoltage releases	Shunt releases
Power consumption			
• During pick-up			
- AC voltages	VA/W	20.2/13	20.2/13
- DC voltages	W	20	13 ... 80
• During uninterrupted duty			
- AC voltages	VA/W	7.2/2.4	--
- DC voltages	W	2.1	--
Response voltage			
• Tripping	V	0.35 ... 0.7 x U_s	0.7 ... 1.1 x U_s
• Pick-up	V	0.85 ... 1.1 x U_s	--
Opening time maximum	ms	20	

Short-circuit protection for auxiliary and control circuits

Melting fuses operational class gG	A	10
Miniature circuit breakers C characteristic	A	6 (prospective short-circuit current < 0.4 kA)

SIRIUS 3RV6/3RV5 Motor Starter Protectors/Circuit Breakers

Notes

1

SIRIUS 3RT6/3RT5 Contactors



2/2	Introduction
2/5	General data
2/6	SIRIUS 3RT60/3RT50 contactors, 3-pole, 3 ... 250 kW
2/14	Accessories
2/17	Spare parts
2/18	Technical specifications

SIRIUS 3RT6/3RT5 Contactors

Introduction

Overview



Size
Type

S00
3RT601

S0
3RT602

3RT60 contactors

Type		3RT6015	3RT6016	3RT6017	3RT6018	3RT6023	3RT6024	3RT6025	3RT6026	3RT6027	3RT6028
AC, DC operation		(p. 2/6, 2/7)				(p. 2/9, 2/9)					
AC-3											
I _e /AC-3/400 V	A	7	9	12	16	9	12	17	25	32	38
400 V	kW	3	4	5.5	7.5	4	5.5	7.5	11	15	18.5
230 V	kW	1.5	2.2	3	4	2.2	3	4	5.5	7.5	11
690 V	kW	4	5.5	5.5	7.5	7.5	7.5	11	11	18.5	18.5
1 000 V	kW	--	--	--	--	--	--	--	--	--	--
AC-4 (for I _a = 6 x I _e)											
400 V	kW	3	4	4	5.5	4	5.5	7.5	7.5	11	11
400 V (200 000 operating cycles)	kW	1.15	2	2	2.5	2	2.6	3.5	4.4	6	6
AC-1 (40 °C, ≤ 690 V)											
I _e	3RT60 A	18	22	22	22	40	40	40	40	50	50
Accessories for contactors											
Auxiliary switch blocks	On front	3RH6911 (p. 2/15)				3RH6911 (p. 2/15)					
	Lateral	3RH6911 (p. 2/15)				3RH6921 (p. 2/15)					
Surge suppressors		3RT6916 (p. 2/16)				3RT6926 (p. 2/16)					
3RU61 thermal overload relays											
3RU61 thermal overload relays, CLASS 10		3RU6116 0.11 ... 16 A (Ch. 4)				3RU6126 1.8 ... 40 A (Ch. 4)					
3RV60 Motor starter protectors/circuit breakers											
Motor starter protectors/circuit breakers		3RV6011 0.11 ... 16 A (Ch. 1)				3RV6021 11 ... 40 A (Ch. 1)					



Size
Type

S2
3RT503

S3
3RT504

3RT50 contactors

Type	3RT5034	3RT5035	3RT5036	3RT5044	3RT5045	3RT5046
AC, DC operation	(p. 2/8, 2/10)			(p. 2/8, 2/10)		

AC-3

I_e /AC-3/400 V	A	32	40	50	65	80	95
400 V	kW	15	18.5	22	30	37	45
230 V	kW	7.5	11	15	18.5	22	22
500 V	kW	18.5	22	30	37	45	55
690 V	kW	18.5	22	22	45	55	55
1 000 V	kW	--	--	--	30	37	37

AC-4 (for $I_a = 6 \times I_e$)

400 V	kW	15	18.5	22	30	37	45
400 V (200 000 operating cycles)	kW	8.2	9.5	12.6	15.1	17.9	22

AC-1 (40 °C, ≤ 690 V)

I_e	A	50	60	60	100	120	120
-------	---	----	----	----	-----	-----	-----

Accessories for contactors

Auxiliary switch blocks	On front	3RH5921		(p. 2/15)		
	Lateral	3RH5921		(p. 2/15)		
Terminal covers		--			3RT5946-4EA1/2	(p. 2/15)
Surge suppressors		3RT5926/36		(p. 2/16)		

3RU51 thermal overload relays

3RU51 thermal overload relays, CLASS 10	3RU5136	5.5 ... 50	(Ch. 4)	3RU5146	18 ... 100 A	(Ch. 4)
--	----------------	------------	---------	----------------	--------------	---------

3RV50 Motor starter protectors/circuit breakers

Motor starter protectors/circuit breakers	3RV5031	22 ... 50	(Ch. 1)	3RV5041	45 ... 100 A	(Ch. 1)
--	----------------	-----------	---------	----------------	--------------	---------

SIRIUS 3RT6/3RT5 Contactors

Introduction

2



S6
3RT505



S10
3RT506



S12
3RT507

Size
Type

3RT50 contactors

Type AC, DC operation	3RT5054 (p. 2/11)	3RT5055	3RT5056	3RT5064 (p. 2/11)	3RT5065	3RT5066	3RT5075 (p. 2/11)	3RT5076
--------------------------	----------------------	---------	---------	----------------------	---------	---------	----------------------	---------

AC-3

I_e /AC-3/400 V	A	115	150	185	225	265	300	400	500
400 V	kW	55	75	90	110	132	160	200	250
230 V	kW	37	45	55	55	75	90	132	160
500 V	kW	75	90	110	160	160	200	250	355
690 V	3RT50 kW	110	132	160	200	250	250	400	400/500
1 000 V	3RT50 kW	75	90	90	90	132	132	250	250/710

AC-4 (for $I_a = 6 \times I_e$)

400 V	kW	55	75	90	110	132	160	200	250
400 V	3RT50 kW	29	38	45	54	66	71	84	98/161
(200 000 operating cycles)									

AC-1 (40 °C, ≤ 690 V)

I_e	3RT50	A	160	185	215	275	330	330	430	610
-------	-------	---	------------	------------	------------	------------	------------	------------	------------	------------

Accessories for contactors

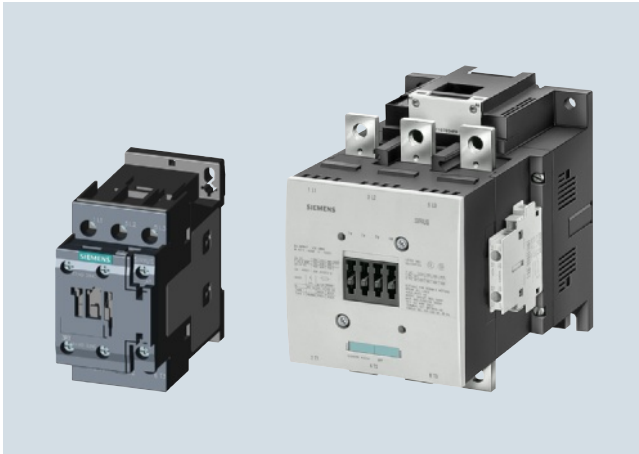
Auxiliary switch blocks	On front Lateral	3RH5921 3RH5921	(p. 2/15) (p. 2/15)
Terminal covers		3RT5966-4EA1	(p. 2/15) 3RT5966-4EA1 (p. 2/15)

3RU51 thermal overload relays

3RU51 thermal overload relays, CLASS 10	3RU5156	(Ch. 4)	3RU5166	(Ch. 4)	3RU5176	(Ch. 4)
--	----------------	---------	----------------	---------	----------------	---------

Overview

Sizes S00 to S12, up to 250 kW



Standards

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

3RT6 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).

Size S2/S3 contactors have no auxiliary contact integrated.

Size S6/S10/S12 contactors contain 4 integrated auxiliary contacts (2 NO + 2 NC).

All basic units (except coupling contactors) can be extended with auxiliary switch blocks:

- For sizes S00/S0/S2/S6/S10/S12, additional auxiliary switches with a maximum of four auxiliary contacts can be mounted.
- For size S3, additional auxiliary switches with a maximum of eight auxiliary contacts can be mounted.
- Of the maximum number of auxiliary contacts (integrated plus mountable) possible on the device, no more than four NC contacts are permitted.

Article No. scheme

Digit of the Article No.	1st - 3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th
	□□□	□	□	□	□	-	□	□	□	□
Power contactors	3 R T									
SIRIUS			5/6							
Device type (0 = 3-pole motor contactor)			0							
Contactor size (1 = S00, 2 = S0, 3 = S2, 4 = S3, 5 = S6, etc.)				□						
Power dependent on size (e. g. 27 = 15 kW)					□					
Connection type (1 = screw)							1			
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)										□
Example	3 R T	6	0	2	7	-	1	A	P	0 0

Note:

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

For your orders, please use the article numbers quoted in the catalog in the Selection and ordering data.

Contact reliability

If voltages ≤ 110 V and currents ≤ 100 mA are to be switched, the auxiliary contacts of the 3RT6 contactor or 3RH61 contactor relay should be used as they guarantee a high level of contact reliability.

Connection methods

The 3RT6/3RT5 contactors are available with screw terminals.

Ratings of three-phase motors

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

Control supply voltage

Contactors S00 to S3 are available as versions for AC or DC operations.

Contactors S6 to S12 are available as AC/DC versions.

Surge suppression

The contactors S00-S3 can be equipped with surge suppressors like varistors, RC-elements or diode combinations.

Contactors S6-S12 are already equipped with varistor surge suppressors.

Note:

The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are equipped with surge suppressors (diode 6 to 10 times; diode assembly 2 to 6 times, varistor and suppressor diode +2 to 5 ms).

SIRIUS 3RT6/3RT5 Contactors

SIRIUS 3RT60/3RT50 contactors, 3-pole, 3 ... 250 kW

Selection and ordering data

AC operation, screw terminals



3RT601.-1A...

Rated data

AC-2 and AC-3,
 T_U : Up to 60 °COperational
current I_e up to

400 V

A

Rating of
three-phase motors
at 50 Hz and**400 V**

kW

AC-1,
 T_U : 40 °COperational
current I_e up to

690 V

A

Auxiliary contacts

Ident. No.

Version

Rated control supply
voltage U_s at 50/60
Hz

Article No.



NO



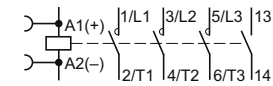
NC

V AC

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

Size S00¹⁾

- With auxiliary contact 1 NO, Ident. No. **10**

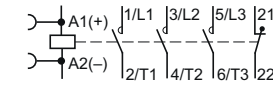


7

3

18

- With auxiliary contact 1 NC, Ident. No. **01**

**10**

1

--

24

110

220

3RT6015-1AB01**3RT6015-1AF01****3RT6015-1AN21****01**

--

1

24

110

220

3RT6015-1AB02**3RT6015-1AF02****3RT6015-1AN22**

9

4

22

10

1

--

24

110

220

3RT6016-1AB01**3RT6016-1AF01****3RT6016-1AN21****01**

--

1

24

110

220

3RT6016-1AB02**3RT6016-1AF02****3RT6016-1AN22**

12

5.5

22

10

1

--

24

110

220

3RT6017-1AB01**3RT6017-1AF01****3RT6017-1AN21****01**

--

1

24

110

220

3RT6017-1AB02**3RT6017-1AF02****3RT6017-1AN22**

16

7.5

22

10

1

--

24

110

220

3RT6018-1AB01**3RT6018-1AF01****3RT6018-1AN21****01**

--

1

24

110

220

3RT6018-1AB02**3RT6018-1AF02****3RT6018-1AN22**

¹⁾ For size S00: Coil operating range
at 50 Hz: $0.8 \dots 1.1 \times U_s$,
at 60 Hz: $0.85 \dots 1.1 \times U_s$.

Other voltages [according to page 2/12](#) on request.

For accessories [see page 2/15](#).

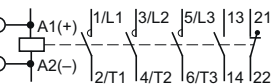
SIRIUS 3RT6/3RT5 Contactors

SIRIUS 3RT60/3RT50 contactors, 3-pole, 3 ... 250 kW

AC operation, screw terminals



3RT602.-1A..0

Rated data			Auxiliary contacts		Rated control supply voltage U_s at 50/60 Hz		Article No.
AC-2 and AC-3, T_U : Up to 60 °C	Rating of three-phase motors at 50 Hz and	AC-1, T_U : 40 °C	Ident. No.	Version			
Operational current I_e up to		Operational current I_e up to					
400 V	400 V	690 V					
A	kW	A		NO	NC	V AC	
For screw and snap-on mounting onto TH 35 standard mounting rail							
Size S0							
							
9	4	40	11	1	1	24 110 220	3RT6023-1AC20 3RT6023-1AG20 3RT6023-1AN20
12	5.5	40	11	1	1	24 110 220	3RT6024-1AC20 3RT6024-1AG20 3RT6024-1AN20
17	7.5	40	11	1	1	24 110 220	3RT6025-1AC20 3RT6025-1AG20 3RT6025-1AN20
25	11	40	11	1	1	24 110 220	3RT6026-1AC20 3RT6026-1AG20 3RT6026-1AN20
32	15	50	11	1	1	24 110 220	3RT6027-1AC20 3RT6027-1AG20 3RT6027-1AN20
38	18.5	50	11	1	1	24 110 220	3RT6028-1AC20 3RT6028-1AG20 3RT6028-1AN20

Other voltages [according to page 2/12](#) on request.For accessories [see page 2/15](#).For spare parts [see page 2/17](#).

SIRIUS 3RT6/3RT5 Contactors

SIRIUS 3RT60/3RT50 contactors, 3-pole, 3 ... 250 kW

AC operation, screw terminals



3RT503.-1A..0

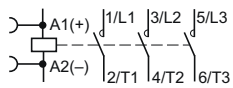


3RT504.-1A..0

Rated data			Auxiliary contacts		Rated control supply voltage U_s at 50/60 Hz	Article No.
AC-2 and AC-3, T_U : Up to 60 °C	Rating of three-phase motors at 50 Hz and	AC-1, T_U : 40 °C	Ident. No.	Version		
Operational current I_e up to		Operational current I_e up to				
500 V	400 V	690 V				
A	kW	A			V AC	

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

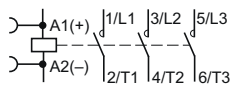
Size S2



32	15	50	--	--	--	24 110 220	3RT5034-1AC20 3RT5034-1AG20 3RT5034-1AN20
40	18.5	60	--	--	--	24 110 220	3RT5035-1AC20 3RT5035-1AG20 3RT5035-1AN20
50	22	60	--	--	--	24 110 220	3RT5036-1AC20 3RT5036-1AG20 3RT5036-1AN20

For screw and snap-on mounting onto TH 35 and TH 75 standard mounting rail

Size S3



65	30	100	--	--	--	24 110 220	3RT5044-1AC20 3RT5044-1AG20 3RT5044-1AN20
80	37	120	--	--	--	24 110 220	3RT5045-1AC20 3RT5045-1AG20 3RT5045-1AN20
95	45	120	--	--	--	24 110 220	3RT5046-1AC20 3RT5046-1AG20 3RT5046-1AN20

Other voltages [according to page 2/12](#) on request.

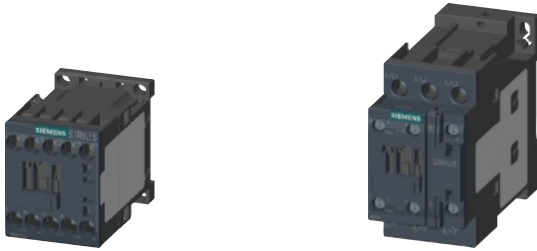
For accessories [see page 2/15](#).

For spare parts [see page 2/17](#).

SIRIUS 3RT6/3RT5 Contactors

SIRIUS 3RT60/3RT50 contactors, 3-pole, 3 ... 250 kW

DC operation, screw terminals



3RT601.-1B.40

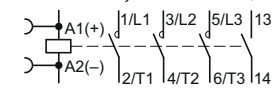
3RT602.-1B.40

Rated data		Auxiliary contacts	Rated control supply voltage U_s		Article No.
AC-2 and AC-3, T_U : Up to 60 °C	Rating of three-phase motors at 50 Hz and		Ident. No.	Version	
Operational current I_e up to	400 V	Operational current I_e up to			
400 V		690 V			
A	kW	A	NO	NC	V DC

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

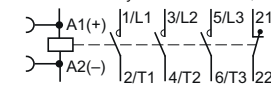
Size S00

- With auxiliary contact 1 NO, Ident. No. **10**



7 3 18

- With auxiliary contact 1 NC, Ident. No. **01**

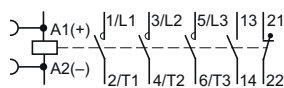


10 1 -- 24 220

			01	--	1	24	220	3RT6015-1BB41	0.291
								3RT6015-1BM41	0.294
			10	1	--	24	220	3RT6015-1BB42	0.291
								3RT6015-1BM42	0.287
9	4	22	10	1	--	24	220	3RT6016-1BB41	0.290
								3RT6016-1BM41	0.290
			01	--	1	24	220	3RT6016-1BB42	0.292
								3RT6016-1BM42	0.295
12	5.5	22	10	1	--	24	220	3RT6017-1BB41	0.294
								3RT6017-1BM41	0.294
			01	--	1	24	220	3RT6017-1BB42	0.290
								3RT6017-1BM42	0.294
16	7.5	22	10	1	--	24	220	3RT6018-1BB41	0.291
								3RT6018-1BM41	0.287
			01	--	1	24	220	3RT6018-1BB42	0.291
								3RT6018-1BM42	0.291

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

Size S0



9 4 40

			11	1	1	24		3RT6023-1BB40	0.596
12	5.5	40	11	1	1	24	220	3RT6024-1BB40	0.597
								3RT6024-1BM40	0.587
17	7.5	40	11	1	1	24	220	3RT6025-1BB40	0.598
								3RT6025-1BM40	0.587
25	11	40	11	1	1	24	220	3RT6026-1BB40	0.596
								3RT6026-1BM40	0.596
32	15	50	11	1	1	24	220	3RT6027-1BB40	0.608
								3RT6027-1BM40	0.604
38	18.5	50	11	1	1	24	220	3RT6028-1BB40	0.604
								3RT6028-1BM40	0.604

Other voltages [according to page 2/12](#) on request.For accessories [see page 2/15](#).

SIRIUS 3RT6/3RT5 Contactors

SIRIUS 3RT60/3RT50 contactors, 3-pole, 3 ... 250 kW

DC operation, screw terminals



3RT503.-1B.40

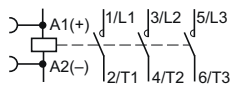


3RT504.-1B.40

Rated data			Auxiliary contacts		Rated control supply voltage U_s	Article No.
AC-2 and AC-3, T_U : Up to 60 °C		AC-1, T_U : 40 °C	Ident. No.	Version		
Operational current I_e up to	Rating of three-phase motors at 50 Hz and	Operational current I_e up to				
500 V	400 V	690 V				
A	kW	A			V DC	
				NO NC		

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

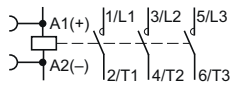
Size S2



32	15	50	--	--	--	24 220	3RT5034-1BB40 3RT5034-1BM40
40	18.5	60	--	--	--	24 220	3RT5035-1BB40 3RT5035-1BM40
50	22	60	--	--	--	24 220	3RT5036-1BB40 3RT5036-1BM40

For screw and snap-on mounting onto TH 35 and TH 75 standard mounting rail

Size S3



65	30	100	--	--	--	24 220	3RT5044-1BB40 3RT5044-1BM40
80	37	120	--	--	--	24 220	3RT5045-1BB40 3RT5045-1BM40
95	45	120	--	--	--	24 220	3RT5046-1BB40 3RT5046-1BM40

Other voltages [according to page 2/12](#) on request.

For accessories [see page 2/15](#).

For spare parts [see page 2/17](#).

SIRIUS 3RT6/3RT5 Contactors

SIRIUS 3RT60/3RT50 contactors, 3-pole, 3 ... 250 kW

UC operating mechanism - AC/DC operation (50/60 Hz and DC)

- Withdrawable coils with integrated surge suppressor (varistor)
- Control circuit: Screw terminals
- Main circuit: Busbar connections, for 3RT5054 (55 kW) box terminals



3RT5054-1A.36



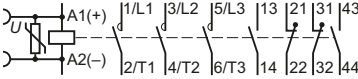
3RT5055-6A.36



3RT506-.6A.36



3RT507-.6A.36

Rated data					AC-1, T_U : 40 °C	Auxiliary contacts, lateral		Rated control supply voltage U_s	Article No.
AC-2 and AC-3, T_U : Up to 60 °C					Operational current I_e up to	Version			
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and				690 V				
500 V	230 V	400 V	500 V	690 V					
A	kW	kW	kW	kW					
A	kW	kW	kW	kW	A	NO	NC	V AC/DC	
Conventional operating mechanisms									
									
Size S6									
115	37	55	75	110	160	2	2	23 ... 26 110 ... 127 220 ... 240	3RT5054-1AB36 3RT5054-1AF36 3RT5054-1AP36
150	45	75	90	132	185	2	2	23 ... 26 110 ... 127 220 ... 240	3RT5055-6AB36 3RT5055-6AF36 3RT5055-6AP36
185	55	90	110	160	215	2	2	23 ... 26 110 ... 127 220 ... 240	3RT5056-6AB36 3RT5056-6AF36 3RT5056-6AP36
Size S10									
225	55	110	160	200	275	2	2	23 ... 26 110 ... 127 220 ... 240	3RT5064-6AB36 3RT5064-6AF36 3RT5064-6AP36
265	75	132	160	250	330	2	2	23 ... 26 110 ... 127 220 ... 240	3RT5065-6AB36 3RT5065-6AF36 3RT5065-6AP36
300	90	160	200	250	330	2	2	23 ... 26 110 ... 127 220 ... 240	3RT5066-6AB36 3RT5066-6AF36 3RT5066-6AP36
Size S12									
400	132	200	250	400	430	2	2	23 ... 26 110 ... 127 220 ... 240	3RT5075-6AB36 3RT5075-6AF36 3RT5075-6AP36
500	160	250	355	400	610	2	2	23 ... 26 110 ... 127 220 ... 240	3RT5076-6AB36 3RT5076-6AF36 3RT5076-6AP36

Other voltages [according to page 2/12](#) on request.

For accessories [see page 2/15](#).

For spare parts [see page 2/17](#).

SIRIUS 3RT6/3RT5 Contactors

SIRIUS 3RT60/3RT50 contactors, 3-pole, 3 ... 250 kW

Options

Rated control supply voltages, possible on request (change of 10th and 11th digit of the Article No.)

Rated control supply voltage U_s	Contactor type	3RT601, 3RH61	3RT602, 3RT503, 3RT504
------------------------------------	----------------	---------------	------------------------

Sizes S00 to S3

AC operation

Solenoid coils for 50 Hz¹⁾

24 V AC	B0	B0
48 V AC	H0	H0
110 V AC	F0	F0
220 V AC	N2	M0
230 V AC	P0	P0
380 V AC	Q0	Q0

Solenoid coils for 50 and 60 Hz¹⁾

24 V AC	B0	C2
48 V AC	H0	
110 V AC	F0	G2
220 V AC	N2	N2
230 V AC	P0	L2
400 V AC 50 Hz/440 V AC 60 Hz	R6	R6

DC operation

24 V DC	B4	B4
48 V DC	W4	W4
110 V DC	F4	F4
220 V DC	M4	M4

Examples

AC operation 3RT60 23-1AN20 With solenoid coil for 50/60 Hz for rated control supply voltage 220 V AC

DC operation 3RT50 34-1BB40 For rated control supply voltage 24 V DC

Rated control supply voltage U_s	Contactor type	3RT5. 5.-.A 3RT5. 6.-.A 3RT5. 7.-.A
------------------------------------	----------------	---

$U_{s \min} \dots U_{s \max}^{2)}$

Sizes S6 to S12

AC/DC operation (50/60 Hz AC, DC)

23 ... 26 V AC/DC	B3
42 ... 48 V AC/DC	D3
110 ... 127 V AC/DC	F3
200 ... 220 V AC/DC	M3
220 ... 240 V AC/DC	P3
240 ... 277 V AC/DC	U3
380 ... 420 V AC/DC	V3
440 ... 480 V AC/DC	R3

¹⁾ Coil operating range:
at 50 Hz: 0.8 to 1.1 x U_s

²⁾ Operating range:
0.8 x $U_{s \min}$ to 1.1 x $U_{s \max}$

SIRIUS 3RT6/3RT5 Contactors

SIRIUS 3RT60/3RT50 contactors, 3-pole, 3 ... 250 kW

DC operation, screw terminals

- low consumption
- extended operating range, integrated surge suppressor



3RT601.-1K.4.



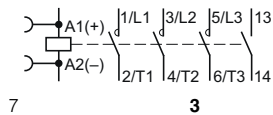
3RT602.-1K.40

Rated data			Auxiliary contacts		Rated control supply voltage U_s	Article No.
AC-2 and AC-3, T_U : Up to 60 °C		AC-1, T_U : 40 °C	Ident. No.	Version		
Operational current I_e up to		Operational current I_e up to				
400 V	Rating of three-phase motors at 50 Hz and 400 V	690 V				
A	kW	A				
			NO	NC	V DC	

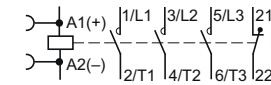
For screw and snap-on mounting onto TH 35 standard mounting rail**Size S00**

(No auxiliary contact block can be added)

- With auxiliary contact 1 NO, Ident. No. **10**

7 **3** 18

- With auxiliary contact 1 NC, Ident. No. **01**

**10** 1 -- 24

110

01 -- 1 24

110

10 1 -- 24

110

01 -- 1 24

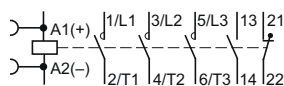
110

10 1 -- 24

110

01 -- 1 24

110

3RT6015-1KB41**3RT6015-1KF41****3RT6015-1KB42****3RT6015-1KF42****3RT6016-1KB41****3RT6016-1KF41****3RT6016-1KB42****3RT6016-1KF42****3RT6017-1KB41****3RT6017-1KF41****3RT6017-1KB42****3RT6017-1KF42****For screw and snap-on mounting onto TH 35 standard mounting rail****Size S0**17 **7.5** 40**11** 1 1 24

110

11 1 1 24

110

11 1 1 24

110

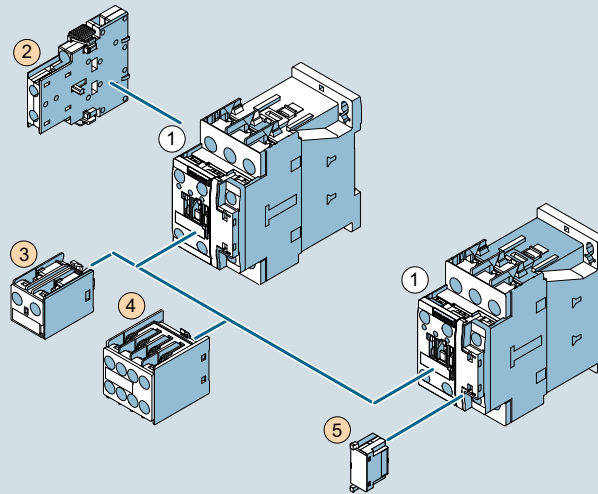
3RT6025-1KB40**3RT6025-1KF40****3RT6026-1KB40****3RT6026-1KF40****3RT6027-1KB40****3RT6027-1KF40**

SIRIUS 3RT6/3RT5 Contactors

Accessories

Overview

3RT6 contactors and coupling contactors
Size S0 with mountable accessories



- ① Contactor size S0
- ② 2-pole auxiliary switch block, laterally mountable
- ③ 1-pole auxiliary switch block, for snapping onto the front
Cable entry from the top
- ④ 4-pole auxiliary switch block, for snapping onto the front
- ⑤ Surge suppressor

Selection and ordering data

For contactors / contactor relays		Auxiliary contacts Version	Article No.
		 	
Type		NO NC	
Auxiliary switch blocks for snapping onto the front			
Sizes S00 and S0			
 3RH6911-1HA22	3RT6.1., 3RT6.2.	4-pole auxiliary switch blocks 2 2	3RH6911-1HA22
	3RH61, 3RH64	2-pole auxiliary switch blocks 1 1	3RH6911-1HA11
		1-pole auxiliary switch blocks, cable entry from top 1 --	3RH6911-1AA10
Sizes S2 and S3			
 3RH5921-1FA22	3RT5.3, 3RT5.4	4-pole auxiliary switch blocks 2 2	3RH5921-1FA22
Sizes S2 to S12			
 3RH5921-1CA..	3RT5.3 ... 3RT5.7	1-pole auxiliary switch blocks 1 -- -- 1	3RH5921-1CA10 3RH5921-1CA01
Laterally mountable auxiliary switch blocks, mounting on the right and/or on the left			
Size S00			
 3RH6921-1DA..	3RT6.1.	-- 2 1 1 2 --	3RH6911-1DA02 3RH6911-1DA11 3RH6911-1DA20
Size S0			
	3RT6.2.	-- 2 1 1 2 --	3RH6921-1DA02 3RH6921-1DA11 3RH6921-1DA20
Sizes S2 to S12			
	3RT5.3 ... 3RT5.7	1 1	3RH5921-1EA11
For contactors		Version	Article No.
Size	Type		
Covers			
 3RT5946-4EA1	Terminal covers for cable lugs and busbar connection¹⁾ For complying with the phase clearances and as touch protection if box terminal is removed (2 units required per contactor)		
	S3	3RT504	--
	S6	3RT5.5	
	S10/S12	3RT5.6, 3RT5.7	3RT5946-4EA1 3RT5956-4EA1 3RT5966-4EA1

¹⁾ Also fits on contactors S6 to S12 with box terminals.

SIRIUS 3RT6/3RT5 Contactors

Accessories

For contactors	Version	Rated control supply voltage U_g ¹⁾		Article No.
		AC operation	DC operation	
Type		V AC	V DC	

Surge suppressors

Size S00

For plugging onto the front side of the contactors
(with and without auxiliary switch block)

3RT6.1, 3RH6.	Varistor	24 ... 48	24 ... 70	3RT6916-1BB00
		48 ... 127	70 ... 150	3RT6916-1BC00
		127 ... 240	150 ... 250	3RT6916-1BD00
		240 ... 400	--	3RT6916-1BE00
		400 ... 600	--	3RT6916-1BF00
3RT6.1, 3RH6.	RC elements	24 ... 48	24 ... 70	3RT6916-1CB00
		48 ... 127	70 ... 150	3RT6916-1CC00
		127 ... 240	150 ... 250	3RT6916-1CD00
		240 ... 400	--	3RT6916-1CE00
		400 ... 600	--	3RT6916-1CF00
3RT6.1, 3RH6.	Diodes	--	12 ... 250	3RT6916-1DG00
3RT6.1, 3RH6.	Diode assemblies (diode and Zener diode) for DC operation	--	12 ... 250	3RT6916-1EH00

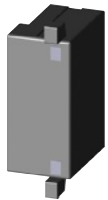


3RT6916-1B.00

Size S0

For plugging onto the front side of the contactors
(prior to mounting of the auxiliary switch block)

3RT6.2	Varistor	24 ... 48	24 ... 70	3RT6926-1BB00
		48 ... 127	70 ... 150	3RT6926-1BC00
		127 ... 240	150 ... 250	3RT6926-1BD00
		240 ... 400	--	3RT6926-1BE00
		400 ... 600	--	3RT6926-1BF00
3RT6.2	RC elements	24 ... 48	24 ... 70	3RT6926-1CB00
		48 ... 127	70 ... 150	3RT6926-1CC00
		127 ... 240	150 ... 250	3RT6926-1CD00
		240 ... 400	--	3RT6926-1CE00
		400 ... 600	--	3RT6926-1CF00
3RT6.2	Diode assembly for DC operation	--	24	3RT6926-1ER00
		--	30 ... 250	3RT6926-1ES00



3RT6926-1E.00

Sizes S2 and S3

For fitting onto the coil terminals at top or bottom

3RT5.3, 3RT5.4	Varistor	24 ... 48	24 ... 70	3RT5926-1BB00
		48 ... 127	70 ... 150	3RT5926-1BC00
		127 ... 240	150 ... 250	3RT5926-1BD00
		240 ... 400	--	3RT5926-1BE00
		400 ... 600	--	3RT5926-1BF00
3RT5.3 ²⁾ , 3RT5.4	RC elements	24 ... 48	24 ... 70	3RT5936-1CB00
		48 ... 127	70 ... 150	3RT5936-1CC00
		127 ... 240	150 ... 250	3RT5936-1CD00
		240 ... 400	--	3RT5936-1CE00
		400 ... 600	--	3RT5936-1CF00
3RT5.3, 3RT5.4	Diode assembly for DC operation	--	24	3RT5936-1ER00
		--	30 ... 250	3RT5936-1ES00
		--	24	3RT5936-1TR00
		--	30 ... 250	3RT5936-1TS00
		--	30 ... 250	3RT5936-1TS00



3RT5926-1B.00



3RT5936-1C.00

Sizes S6 to S12

For connecting to withdrawable coil for contactors with
• conventional operating mechanism 3RT5...-A...
• solid-state operating mechanism 3RT5...-N...

3RT5.5, 3RT5.6, 3RT5.7	RC elements	24 ... 48	24 ... 70	3RT5956-1CB00
		48 ... 127	70 ... 150	3RT5956-1CC00
		127 ... 240	150 ... 250	3RT5956-1CD00
		240 ... 400	--	3RT5956-1CE00
		400 ... 600	--	3RT5956-1CF00



3RT5956-1C.00

¹⁾ Can be used for AC operation for 50/60 Hz. Please inquire about further voltages.

²⁾ For 3RT5.3 with AC operation mountable only at the top.

Selection and ordering data

For contactors		Rated control supply voltage U_s				Article No.
		AC			DC	
Size	Type	50 Hz	50/60 Hz	60 Hz		
		V	V	V	V	
Solenoid coils · AC operation						
	S0	3RT6023,	--	24	--	3RT6924-5AC21 3RT6924-5AG21 3RT6924-5AN21
		3RT6024,	--	110	--	
		3RT6025	--	220	--	
		3RT6026,	--	24	--	3RT6926-5AC21 3RT6926-5AG21 3RT6926-5AN21
		3RT6027,	--	110	--	
		3RT6028	--	220	--	
3RT6924-5A.01						
	S2	3RT5034	--	24	--	3RT5934-5AC21 3RT5934-5AG21 3RT5934-5AN21
			--	110	--	
			--	220	--	
		3RT5035,	--	24	--	3RT5935-5AC21 3RT5935-5AG21 3RT5935-5AN21
		3RT5036,	--	110	--	
			--	220	--	
3RT5934-5A.01						
	S3	3RT5044	--	24	--	3RT5944-5AC21 3RT5944-5AG21 3RT5944-5AN21
			--	110	--	
			--	220	--	
		3RT5045,	--	24	--	3RT5945-5AC21 3RT5945-5AG21 3RT5945-5AN21
		3RT5046	--	110	--	
			--	220	--	
3RT5944-5A.01						
Solenoid coils · DC operation						
	S2	3RT503	--	--	24	3RT5934-5BB41 3RT5934-5BM41
			--	--	220	
	S3	3RT504	--	--	24	3RT5944-5BB41 3RT5944-5BM41
			--	--	220	
	3RT5944-5B.41					

For contactors		Rated control supply voltage		Article No.
		$U_{s \min} \dots U_{s \max}$		
Size	Type	V AC/DC		
Solenoid coils · Withdrawable coils				
Conventional operating mechanisms				
	S6	3RT505	23 ... 26	3RT5955-5AB31 3RT5955-5AF31 3RT5955-5AP31
			110 ... 127	
			220 ... 240	
	S10	3RT506	23 ... 26	3RT5965-5AB31 3RT5965-5AF31 3RT5965-5AP31
			110 ... 127	
			220 ... 240	
S12	3RT507	23 ... 26	3RT5975-5AB31 3RT5975-5AF31 3RT5975-5AP31	
		110 ... 127		
		220 ... 240		

Note:

Contactors with AC and DC coils have different depths. That is why when replacing coils it is only possible to replace AC coils with AC coils and DC coils with DC coils.

SIRIUS 3RT6/3RT5 Contactors

Technical specifications

Technical specifications

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 contact 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:

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

Characters in the equation:

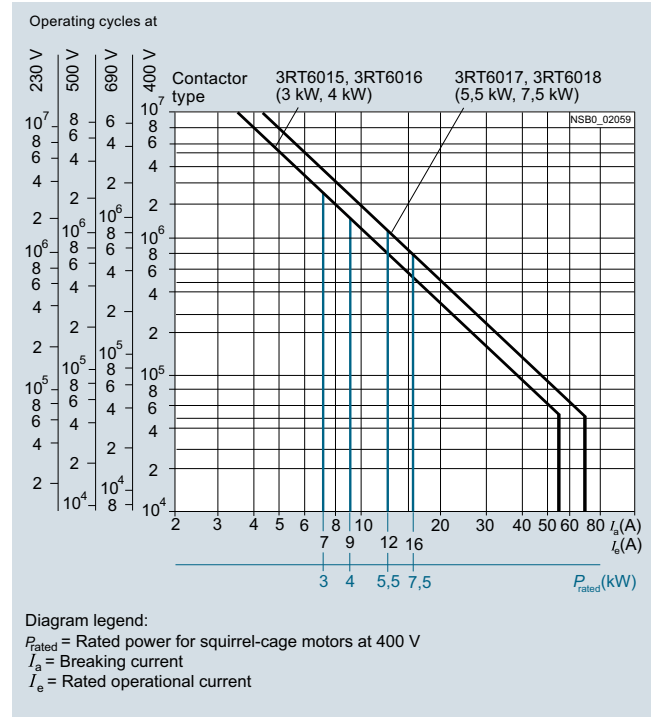
X Contact endurance for mixed operation in operating cycles

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

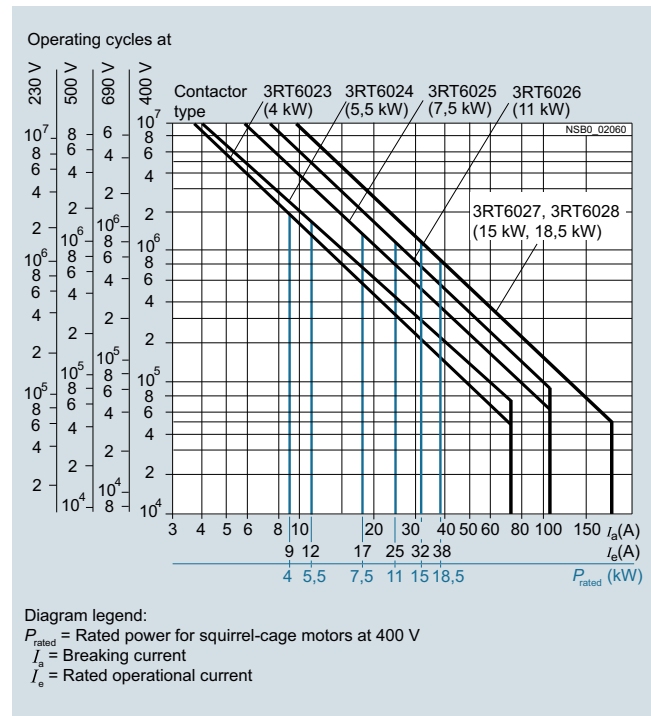
B Contact endurance for inching ($I_a = \text{multiple of } I_e$) in operating cycles

C Inching operations as a percentage of total switching operations

Size S00



Size S0



Size S2

Operating cycles at

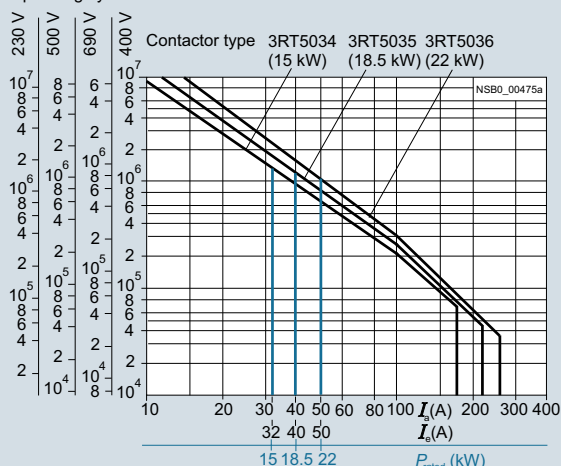


Diagram legend:

 P_{rated} = Rated power for squirrel-cage motors at 400 V I_a = Breaking current I_e = Rated operational current

Size S3

Operating cycles at

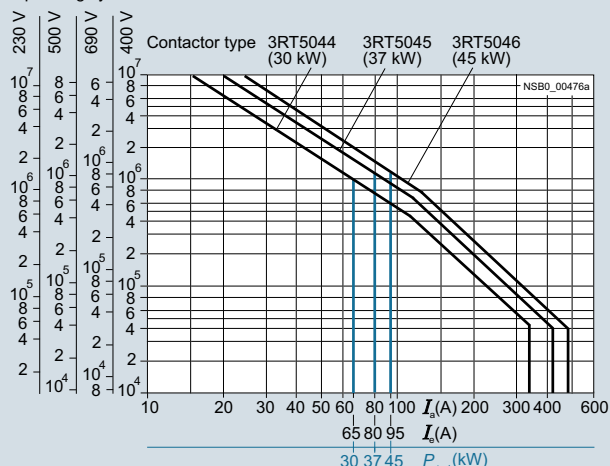


Diagram legend:

 P_{rated} = Rated power for squirrel-cage motors at 400 V I_a = Breaking current I_e = Rated operational current

Sizes S6 to S12

Operating cycles at

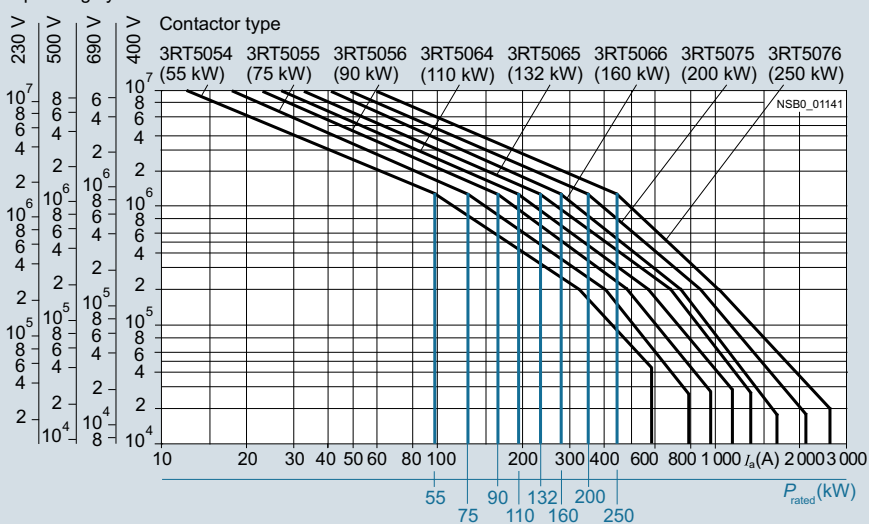


Diagram legend:

 P_{rated} = Rated power for squirrel-cage motors at 400 V I_a = Breaking current I_e = Rated operational current

SIRIUS 3RT6/3RT5 Contactors

Technical specifications

Type	3RT6/3RT5		
Size	S00 to S12		
Rated data of the auxiliary contacts			
Acc. to IEC 60947-5-1 The data apply to integrated auxiliary contacts and contacts in the auxiliary switch blocks for contactor sizes S00 to S0			
Rated insulation voltage U_i (pollution degree 3)	V	690, for laterally mountable auxiliary switch blocks, only the rated operational voltages up to 500 V apply	
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	Up to 230 V	A	6
	380 V	A	3
	400 V	A	3
	500 V	A	2
	660 V ²⁾	A	1
	690 V ²⁾	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 ²⁾	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 ²⁾	A	0.1
Contact reliability at 17 V, 5 mA according to IEC 60947-5-4	Frequency of contact faults $< 10^{-8}$ i.e. < 1 fault per 100 million operating cycles		

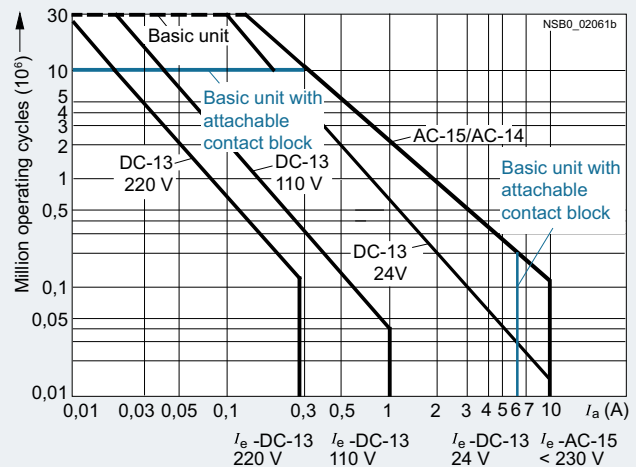
Endurance of the auxiliary contacts

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.

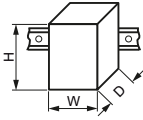
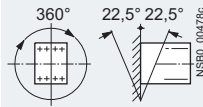
The characteristic curves apply to:

- Integrated auxiliary contacts on 3RT60
- 3RH6911, 3RH6921 auxiliary switch blocks¹⁾



SIRIUS 3RT6/3RT5 Contactors

Technical specifications

Type			
Size			
Dimensions (W x H x D) ¹⁾			
• With mounted auxiliary switch block			
• With mounted function module			
		mm	
		mm	
		mm	
General technical specifications			
Permissible mounting position			
The contactors are designed for operation on a vertical mounting surface.			
			
Mechanical endurance			
• Basic units	Operating cycles	30 million	
• Basic units with snap-on auxiliary switch block	Operating cycles	10 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 IEC 60947-1, Appendix N	V	400	
Mirror contacts			
A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.			
• 3RT601. (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 IEC 60947-1, Appendix F
Ambient temperature			
• During operation	°C	-25 ... +60	
• During storage	°C	-55 ... +80	
Degree of protection acc. to IEC 60947-1, Appendix C		IP20	
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)

1) Dimensions for devices with screw terminals.

2) For contact endurance of the main contacts see page 2/18.

3) For conductor cross-sections, see page 2/22.

SIRIUS 3RT6/3RT5 Contactors

Technical specifications

Type			3RT6015	3RT6016	3RT6017	3RT6018
Size			S00	S00	S00	S00
Main circuit						
Load rating with AC						
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⁾	230 V	kW	6	7.5	7.5	7.5
P.f. = 0.95 (at 60 °C)	400 V	kW	10.5	13	13	13
	690 V	kW	18	22	22	22
• Minimum conductor cross-section for loads with I_e	At 40 °C	mm ²	2.5	4	4	4
	At 60 °C	mm ²	2.5	2.5	2.5	2.5
Utilization categories AC-2 and AC-3						
• Rated operational currents I_e	Up to 400 V	A	7	9	12	16
	440 V	A	7	9	11	14
	500 V	A	6	7.7	9.2	12.4
	690 V	A	4.9	6.7	6.7	8.9
• Rated power for slipring or squirrel-cage motors at 50 and 60 Hz	At 230 V	kW	1.5	2.2	3	4
	400 V	kW	3	4	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
Power loss per conducting path	At I_e /AC-3	W	0.42	0.7	1.24	2.2
Utilization category AC-4 (for $I_a = 6 \times I_e$)						
• Rated operational current I_e , maximum	Up to 400 V	A	6.5	8.5	8.5	11.5
• Rated power for squirrel-cage motors with 50 Hz and 60 Hz	Up to 400 V	A	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 400 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
	400 V	kW	1.15	2	2	2.5
	690 V	kW	1.15	2.5	2.5	3.5
Switching frequency						
Switching frequency z in operating cycles/hour						
Contactors without overload relays						
• No-load switching frequency	AC/DC	h ⁻¹	10 000			
• Switching frequency z during rated operation ³⁾						
- I_e /AC-1	At 400 V	h ⁻¹	1 000			
- I_e /AC-3	At 400 V	h ⁻¹	750			
- I_e /AC-4	At 400 V	h ⁻¹	250			
Contactors with overload relays						
• Mean value		h ⁻¹	15			

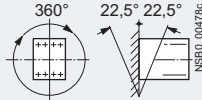
¹⁾ Industrial furnaces and electric heaters with resistance heating, etc. (increased power consumption on heating up has been taken into account).

²⁾ According to IEC 60947-4-1.
Rated values for various start-up conditions
see Chapter 7, "Protection Equipment" → "Overload Relays".

³⁾ Dependence of the switching frequency z' on the operational current I' and operational voltage U' :
 $z' = z \cdot (I_e/I') \cdot (400 V/U')^{1.5} \cdot 1/h$

Type			3RT6015	3RT6016	3RT6017	3RT6018
Size			S00	S00	S00	S00
Conductor cross-sections						
Main and auxiliary conductors (1 or 2 conductors can be connected)			 Screw terminals			
• Solid or stranded	mm ²		2 x (0.5 ... 1.5) ¹⁾ ; 2 x (0.75 ... 2.5) ¹⁾ ; max. 2 x 4			
• Finely stranded with end sleeves (DIN 46228-1)	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 Pozidriv size 2, Ø 5 ... 6)			
• Tightening torque	Nm		0.8 ... 1.2 (7 ... 10.3 lb.in)			

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

Type				3RT6023	3RT6024	3RT6025	3RT6026	3RT6027	3RT6028
Size				S0	S0	S0	S0	S0	S0
Dimensions (W x H x D) for AC operation ¹⁾				45 x 85 x 97 / 45 x 101.5 x 97	45 x 85 x 141 / 45 x 101.5 x 144	45 x 85 x 166 / 45 x 101.5 x 166			
• With mounted auxiliary switch block									
• With mounted function module									
Dimensions (W x H x D) for DC operation ¹⁾				45 x 85 x 107 / 45 x 101.5 x 107	45 x 85 x 151 / 45 x 101.5 x 154	45 x 85 x 176 / 45 x 101.5 x 176			
• With mounted auxiliary switch block									
• With mounted function module									
General data									
Permissible mounting position									
The contactors are designed for operation on a vertical mounting surface.									
Mechanical endurance									
• Basic units	Operating cycles			10 million					
• Basic units with snap-on auxiliary switch block	Operating cycles			10 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 IEC 60947-1, Appendix N)	V			400					
Mirror contacts									
A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.									
• Integrated auxiliary switches				Yes, acc. to IEC 60947-4-1, Appendix F					
• 3RT602. (removable auxiliary switch block)				Yes, acc. to IEC 60947-4-1, Appendix F					
Permissible ambient temperature									
• During operation	°C			-25 ... +60					
• During storage	°C			-55 ... +80					
Degree of protection acc. to IEC 60947-1, Appendix C				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)					

1) Dimensions for devices with screw terminals.

2) For contact endurance of the main contacts see page 2/18.

SIRIUS 3RT6/3RT5 Contactors

Technical specifications

Type			3RT6023	3RT6024	3RT6025	3RT6026	3RT6027	3RT6028		
Size			S0	S0	S0	S0	S0	S0		
Main circuit										
Load rating with AC										
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)	230 V	kW	13.3				15.5			
	400 V	kW	23				27.5			
	690 V	kW	40				47.5			
• Minimum conductor cross-section for loads with I_e	At 40 °C	mm ²	10				10			
	At 60 °C	mm ²	10				10			
Utilization categories AC-2 and AC-3										
• Rated operational currents I_e	Up to 400 V	A	9	12	17	25	32	38		
	440 V	A	9	12	17	22	32	35		
	500 V	A	9	12	17	18	32	32		
	690 V	A	9	9	13	13	21	21		
• Rated power for slipring or squirrel-cage motors at 50 and 60 Hz	At 230 V	kW	2.2	3	4	5.5	7.5	11		
	400 V	kW	4	5.5	7.5	11	15	18.5		
	690 V	kW	7.5	7.5	11	11	18.5	18.5		
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 , max.	Up to 400 V	A	8.5	12.5	15.5	15.5	22			
• Rated power for squirrel-cage motors with 50 Hz and 60 Hz	At 400 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 400 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			
	400 V	kW	2	2.6	3.5	4.4	6			
	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							
	DC	h ⁻¹	1 500							
• Switching frequency z during rated operation ²⁾										
- I_e /AC-1	At 400 V	h ⁻¹	1 000							
	At 400 V	h ⁻¹	1 000			750				
	At 400 V	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⁾ Dependence of the switching frequency z' on the operational current I' and operational voltage U':
 $z' = z \cdot (I_e I') \cdot (400 \text{ V}/U')^{1.5} \cdot 1/\text{h}$

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

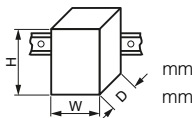
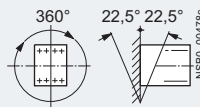
²⁾ Dependence of the switching frequency z' on the operational current I' and operational voltage U' :
 $z' = z \cdot (I_e/I') \cdot (400 V/U')^{1.5} \cdot 1/h$

Type			3RT6023	3RT6024	3RT6025	3RT6026	3RT6027	3RT6028
Size			S0	S0	S0	S0	S0	S0
Conductor cross-sections (1 or 2 conductors connectable)								
Main conductors			 Screw terminals					
Conductor cross-section								
• Solid or stranded	mm ²		2 x (1 ... 2.5) ¹⁾ ; 2 x (2.5 ... 10) ¹⁾					
• Finely stranded with end sleeves (DIN 46228-1)	mm ²		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) ¹⁾ ; 2 x (14 ... 8) ¹⁾					
• Terminal screws			M4 (for Pozidriv size 2, Ø 5 ... 6)					
- Tightening torque	Nm		2 ... 2.5 (18 ... 22 lb.in)					
Auxiliary conductors								
• Solid or stranded	mm ²		2 x (0.5 ... 1.5) ¹⁾ ; 2 x (0.75 ... 2.5) ¹⁾ ; 2 x 4					
• Finely stranded with end sleeves (DIN 46228-1)	mm ²		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⁾ ; 2 x 12					
• Terminal screws			M3 (for Pozidriv size 2, Ø 5 ... 6)					
- Tightening torque	Nm		0.8 ... 1.2 (7 ... 10.3 lb.in)					

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

SIRIUS 3RT6/3RT5 Contactors

Technical specifications

Type			3RT5034	3RT5035	3RT5036	3RT5044	3RT5045	3RT5046
Size			S2				S3	
Dimensions (W x H x D), AC operation		mm	55 x 112 x 110				70 x 146 x 134	
• With mounted auxiliary switch block		mm	55 x 112 x 159				70 x 146 x 183	
Dimensions (W x H x D), DC operation			55 x 112 x 125				70 x 146 x 147	
• With mounted auxiliary switch block			55 x 112 x 174				70 x 146 x 196	
General data								
Permissible mounting position								
The contactors are designed for operation on a vertical mounting surface.								
For DC operation and up to 22.5° inclination in front, the coil operating range is reduced to 0.85 ... 1.1 x U_s .								
Mechanical endurance								
• Basic units	Operating cycles		10 million					
• Basic units with snap-on auxiliary switch block	Operating cycles		10 million					
Electrical endurance			1)					
Rated insulation voltage U_i (pollution degree 3)	V		690			1 000		
Rated impulse withstand voltage U_{imp}	kV		6			6		
Protective separation between the coil and the main contacts acc. to IEC 60947-1, Appendix N	V		400			690		
Mirror contacts								
A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.								
• With removable auxiliary switch block			Yes, acc. to IEC 60947-4-1, Appendix F					
Permissible ambient temperature								
• During operation	°C		-25 ... +60					
• During storage	°C		-55 ... +80					
Degree of protection acc. to IEC 60947-1, Appendix C			IP20					
• Connection range			IP00/open (where applicable, use additional terminal covers)					
Touch protection acc. to EN 50274			Finger-safe only for vertical contact from the front					
Shock resistance (AC and DC operation)								
• Rectangular pulse	g/ms		10/5 and 5/10			6.8/5 and 4/10		
• Sine pulse	g/ms		15/5 and 8/10			10.6/5 and 6.2/10		
Conductor cross-sections			2)					

1) For contact endurance of the main contacts [see page 2/18](#).2) For conductor cross-sections, [see page 2/28](#).

SIRIUS 3RT6/3RT5 Contactors

Technical specifications

Type Size		3RT5034 S2	3RT5035 S2	3RT5036 S2	3RT5044 S3	3RT5045 S3	3RT5046 S3
Main circuit							
Load rating with AC							
Utilization category AC-1							
Switching resistive loads							
• Rated operational currents I_e							
- At 40 °C up to 690 V	A	50	60	60	100	120	120
- At 40 °C up to 1 000 V	A	--	--	--	50	60	70
- At 60 °C up to 690 V	A	45	55	55	90	100	100
- At 60 °C up to 1 000 V	A	--	--	--	40	50	60
• Rated power for AC loads ¹⁾ with p.f. = 0.95 (at 60 °C)							
- At 230 V	kW	18	22	22	34	38	38
- At 400 V	kW	31	38	38	59	66	66
- At 690 V	kW	54	66	66	102	114	114
- At 1 000 V	kW	--	--	--	66	82	98
• Minimum conductor cross-section for loads with I_e							
- At 40 °C	mm ²	16	16	16	35	50	50
- At 60 °C	mm ²	10	16	16	35	35	35
Utilization categories AC-2 and AC-3							
• Rated operational currents I_e							
- Up to 400 V	A	32	40	50	65	80	95
- At 690 V	A	20	24	24	47	58	58
- At 1 000 V	A	--	--	--	25	30	30
• Rated power for slipring or squirrel-cage motors at 50 and 60 Hz							
- At 230 V	kW	7.5	11	15	18.5	22	22
- At 400 V	kW	15	18.5	22	30	37	45
- At 690 V	kW	18.5	22	22	45	55	55
- At 1 000 V	kW	--	--	--	30	37	37
Power loss per conducting path at I_e/AC-3	W	1.8	2.6	5	4.6	7.7	10.8
Utilization category AC-4 (for $I_a = 6 \times I_e$)							
• Rated operational current I_e , maximum							
- Up to 400 V	A	29	35	41	55	66	80
• Rated power for squirrel-cage motors with 50 Hz and 60 Hz							
- At 400 V	kW	15	18.5	22	30	37	45
The following applies to a contact endurance of about 200 000 operating cycles:							
• Rated operational currents I_e							
- Up to 400 V	A	15.6	18.5	24	28	34	42
- Up to 690 V	A	15.6	18.5	24	28	34	42
- Up to 1 000 V	A	--	--	--	20	23	23
• Rated power for squirrel-cage motors with 50 Hz and 60 Hz							
- At 230 V	kW	4.7	5.4	7.3	8.7	10.4	12
- At 400 V	kW	8.2	9.5	12.6	15.1	17.9	22
- At 690 V	kW	13	15.5	21.8	25.4	30.9	38
- At 1 000 V	kW	--	--	--	22	30	30

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

SIRIUS 3RT6/3RT5 Contactors

Technical specifications

Type Size		3RT5034 S2	3RT5035 S2	3RT5036 S2	3RT5044 S3	3RT5045 S3	3RT5046 S3
Main circuit							
Switching frequency							
Switching frequency z in operating cycles/hour							
Contactors without overload relays							
• No-load switching frequency AC	h ⁻¹	5 000			5 000		
• No-load switching frequency DC	h ⁻¹	1 500			1 000		
• Switching frequency z during rated operation ¹⁾							
- I _e /AC-1	At 400 V h ⁻¹	1 200	1 200	1 000	1 000	900	900
- I _e /AC-3	At 400 V h ⁻¹	1 000	1 000	800	1 000	1000	850
- I _e /AC-4	At 400 V h ⁻¹	250	300	300	300	300	250
Contactors with overload relays							
• Mean value	h ⁻¹	15					

¹⁾ Dependence of the switching frequency z' on the operational current I' and operational voltage U':

$$z' = z \cdot (I_e/I') \cdot (400 \text{ V}/U')^{1.5} \cdot 1/\text{h}$$

SIRIUS 3RT6/3RT5 Contactors

Technical specifications

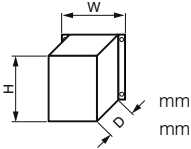
Type Size		3RT503. S2	3RT504. S3	
Conductor cross-sections				
Main conductors (1 or 2 conductors can be connected)		 Screw terminals		
<u>Box terminals</u>				
	- Terminal screws - Tightening torque	Nm lb.in	3 ... 4.5 27 ... 40	4 ... 6 36 ... 53
Front clamping point connected				
 NSB0_00479	Finely stranded with end sleeve	mm ²	0.75 ... 25	2.5 ... 35
	Finely stranded without end sleeve	mm ²	0.75 ... 25	10 ... 50
	Stranded	mm ²	0.75 ... 35	10 ... 70
	Solid	mm ²	0.75 ... 16	2.5 ... 16
	AWG cables, solid or stranded	AWG	18 ... 2	10 ... 2/0
	Ribbon cable conductors (Number x Width x Thickness)	mm	6 x 9 x 0.8	6 x 9 x 0.8
Rear clamping point connected				
 NSB0_00480	Finely stranded with end sleeve	mm ²	0.75 ... 25	2.5 ... 50
	Finely stranded without end sleeve	mm ²	0.75 ... 25	10 ... 50
	Stranded	mm ²	0.75 ... 35	10 ... 70
	Solid	mm ²	0.75 ... 16	2.5 ... 16
	AWG cables, solid or stranded	AWG	18 ... 2	10 ... 2/0
	Ribbon cable conductors (Number x Width x Thickness)	mm	6 x 9 x 0.8	6 x 9 x 0.8
Both clamping points connected				
 NSB0_00481	Finely stranded with end sleeve	mm ²	2 x (0.75 ... 16)	2 x (2.5 ... 35)
	Finely stranded without end sleeve	mm ²	2 x (0.75 ... 16)	2 x (10 ... 35)
	Stranded	mm ²	2 x (0.75 ... 25)	2 x (10 ... 50)
	Solid	mm ²	2 x (0.75 ... 16)	2 x (2.5 ... 16)
	AWG cables, solid or stranded	AWG	2 x (18 ... 2)	2 x (10 ... 1/0)
	Ribbon cable conductors (Number x Width x Thickness)	mm	2 x (6 x 9 x 0.8)	2 x (6 x 9 x 0.8)
<u>Cable lug connection</u> (without box terminals)				
	Finely stranded with cable lug	mm ²	--	10 ... 50 ¹⁾
	Stranded with cable lug	mm ²	--	10 ... 70 ¹⁾
	AWG cables, solid or stranded	AWG	--	7 ... 1/0
	Terminal screws		--	M6
Auxiliary conductors				
	Solid	mm ²	2 x (0.5 ... 1.5) ²⁾ ; 2 x (0.75 ... 2.5) ²⁾ ; max. 2 x (0.75 ... 2)	
	Finely stranded with end sleeve	mm ²	2 x (0.5 ... 1.5) ²⁾ ; 2 x (0.75 ... 2.5) ²⁾	
	AWG cables, solid or stranded	AWG	2 x (20 ... 16) ²⁾ ; 2 x (18 ... 14) ²⁾ ; 1 x 12	
	Terminal screws		M3	
	- Tightening torque	Nm lb.in	0.8 ... 1.2 7 ... 10.3	

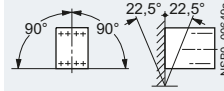
¹⁾ Only with crimped cable lugs according to DIN 46234, max. 20 mm wide.

²⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

SIRIUS 3RT6/3RT5 Contactors

Technical specifications

Type			3RT5054	3RT5055, 3RT5056	3RT5064, 3RT5065, 3RT5066	3RT5075	3RT5076
Size			S6		S10	S12	
Dimensions (W x H x D)			120 x 172 x 170		145 x 210 x 202	160 x 214 x 225	
• With mounted auxiliary switch block			120 x 172 x 217		145 x 210 x 251	160 x 214 x 271	
							
General data							
Permissible mounting position							
The contactors are designed for operation on a vertical mounting surface.							
Mechanical endurance		Operating cycles	10 million				
Electrical endurance			1)				
Rated insulation voltage U_i (pollution degree 3)		V	1 000				
Rated impulse withstand voltage U_{imp}		kV	8				
Protective separation between the coil and the main contacts acc. to IEC 60947-1, Appendix N		V	690				
Mirror contacts			Yes, acc. to IEC 60947-4-1, Appendix F				
A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.							
Permissible ambient temperature							
• During operation		°C	-25 ... +60				
• During storage		°C	-55 ... +80				
Degree of protection acc. to IEC 60947-1, Appendix C			IP00/open (where applicable, use additional terminal covers)				
Touch protection acc. to EN 50274			Finger-safe only for vertical contact from the front				
Shock resistance							
• Rectangular pulse		g/ms	8.5/5 and 4.2/10				
• Sine pulse		g/ms	13.4/5 and 6.5/10				
Conductor cross-sections			2)				

1) For contact endurance of the main contacts [see page 2/18](#).2) For conductor cross-sections, [see page 2/32](#).

SIRIUS 3RT6/3RT5 Contactors

Technical specifications

Type Size		3RT5054 S6	3RT5055 S6	3RT5056 S6	3RT5064 S10	3RT5065 S10	3RT5066 S10	3RT5075 S12	3RT5076 S12
Main circuit									
Load rating with AC									
Utilization category AC-1									
Switching resistive loads									
• Rated operational currents I_e									
- At 40 °C up to 690 V	A	160	185	215	275	330		430	610
- At 60 °C up to 690 V	A	140	160	185	250	300		400	550
- At 60 °C up to 1 000 V	A	80	90	100	100	150		200	200
• Rated power for AC loads ¹⁾ with p.f. = 0.95 (at 60 °C)									
- At 230 V	kW	53	60	70	94	113		151	208
- At 400 V	kW	92	105	121	164	197		263	362
- At 690 V	kW	159	181	210	283	340		454	624
- At 1 000 V	kW	131	148	165	164	246		329	329
• Minimum conductor cross-section for loads with I_e									
- At 40 °C	mm ²	70	95	95	150	185		2 x 150	2 x 185
- At 60 °C	mm ²	50	70	95	120	185		240	2 x 185
Utilization categories AC-2 and AC-3									
• Rated operational currents I_e									
- Up to 400 V	A	115	150	185	225	265	300	400	500
- At 690 V	A	115	150	170	225	265	280	400	450
- At 1 000 V	A	53	65	65	68	95	95	180	180
• Rated power for slipring or squirrel-cage motors at 50 and 60 Hz									
- At 230 V	kW	37	50	61	73	85	97	132	164
- At 400 V	kW	64	84	104	128	151	171	231	291
- At 690 V	kW	113	146	167	223	265	280	400	453
- At 1 000 V	kW	75	90	90	90	132	132	250	250
Power loss per main conducting path at I_e /AC-3/500 V	W	7	9	13	17	18	22	35	55

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

SIRIUS 3RT6/3RT5 Contactors

Technical specifications

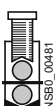
Type Size		3RT5054 S6	3RT5055 S6	3RT5056 S6	3RT5064 S10	3RT5065 S10	3RT5066 S10	3RT5075 S12	3RT5076 S12
Main circuit									
Switching frequency									
Switching frequency z in operating cycles/hour									
Contactors without overload relays									
• No-load switching frequency	h ⁻¹	2 000							
• Switching frequency z during rated operation ¹⁾									
- I _e /AC-1	At 400 V h ⁻¹	800	800		750	800	750	700	500
- I _e /AC-3	At 400 V h ⁻¹	1 000	750		500	700	500	500	420
- I _e /AC-4	At 400 V h ⁻¹	130	130		130	130	130	130	130
Contactors with overload relays									
• Mean value	h ⁻¹	60							

¹⁾ Dependence of the switching frequency z' on the operational current I' and operational voltage U:

$$z' = z \cdot (I_e/I') \cdot (400 \text{ V}/U)^{1.5} \cdot 1/\text{h}$$

SIRIUS 3RT6/3RT5 Contactors

Technical specifications

Type Size	3RT505. S6		3RT506. S10	3RT507. S12	
Conductor cross-sections					
Main conductors (1 or 2 conductors can be connected)		 Screw terminals			
<u>With mounted box terminals</u>		Type	3RT59 55-4G (55 kW)	3RT59 56-4G	3RT59 66-4G
• Terminal screws			M10 (hexagon socket, A/F 4)	M10 (hexagon socket, A/F 4)	M12 (hexagon socket, A/F 5)
- Tightening torque		Nm lb.in	10 ... 12 90 ... 110	10 ... 12 90 ... 110	20 ... 22 180 ... 195
Front clamping point connected					
 NSB0_00479	• Finely stranded with end sleeve	mm ²	16 ... 70	16... 120	70 ... 240
	• Finely stranded without end sleeve	mm ²	16 ... 70	16 ... 120	70 ... 240
	• Stranded	mm ²	16 ... 70	16 ... 120	95 ... 300
	• AWG cables, solid or stranded	AWG	6 ... 2/0	6 ... 250 kcmil	3/0 ... 600 kcmil
	• Ribbon cable conductors (Number x Width x Thickness)	mm	Min. 3 x 9 x 0.8, max. 6 x 15.5 x 0.8	Min. 3 x 9 x 0.8, max. 10 x 15.5 x 0.8	Min. 6 x 9 x 0.8, max. 20 x 24 x 0.5
Rear clamping point connected					
 NSB0_00480	• Finely stranded with end sleeve	mm ²	16 ... 70	16... 120	120 ... 185
	• Finely stranded without end sleeve	mm ²	16 ... 70	16 ... 120	120 ... 185
	• Stranded	mm ²	16 ... 70	16 ... 120	120 ... 240
	• AWG cables, solid or stranded	AWG	6 ... 2/0	6 ... 250 kcmil	250 ... 500 kcmil
	• Ribbon cable conductors (Number x Width x Thickness)	mm	Min. 3 x 9 x 0.8, max. 6 x 15.5 x 0.8	Min. 3 x 9 x 0.8, max. 10 x 15.5 x 0.8	Min. 6 x 9 x 0.8, max. 20 x 24 x 0.5
Both clamping points connected ¹⁾					
 NSB0_00481	• Finely stranded with end sleeve	mm ²	Max. 1 x 50, 1 x 70	Max. 1 x 95, 1 x 120	Min. 2 x 50, max. 2 x 185
	• Finely stranded without end sleeve	mm ²	Max. 1 x 50, 1 x 70	Max. 1 x 95, 1 x 120	Min. 2 x 50, max. 2 x 185
	• Stranded	mm ²	Max. 1 x 50, 1 x 70	Max. 1 x 95, 1 x 120	Min. 2 x 70, max. 2 x 240
	• AWG cables, solid or stranded	AWG	Max. 2 x 1/0	Max. 2 x 3/0	Min. 2 x 2/0, max. 2 x 500 kcmil
	• Ribbon cable conductors (Number x Width x Thickness)	mm	Max. 2 x (6 x 15.5 x 0.8)	Max. 2 x (10 x 15.5 x 0.8)	Max. 2 x (20 x 24 x 0.5)
<u>Busbar connections</u>					
• Connecting bar (max. width)		mm	17	25	
<u>Cable lug connection</u> (without box terminals)					
• Finely stranded with cable lug ²⁾³⁾		mm ²	16 ... 95	50 ... 240	
• Stranded with cable lug ²⁾³⁾		mm ²	25 ... 120	70 ... 240	
• AWG cables, solid or stranded		AWG	4 ... 250 kcmil	2/0 ... 500 kcmil	
• Terminal screws			M8 x 25 (A/F 13)	M10 x 30 (A/F 17)	
- Tightening torque		Nm lb.in	10 ... 14 90 ... 124	14 ... 24 124 ... 210	
Auxiliary conductors					
• Solid		mm ²	2 x (0.5 ... 1.5) ⁴⁾ ; 2 x (0.75 ... 2.5) ⁴⁾ ; max. 2 x (0.75 ... 4)		
• Finely stranded with end sleeve		mm ²	2 x (0.5 ... 1.5) ⁴⁾ ; 2 x (0.75 ... 2.5) ⁴⁾		
• AWG cables, solid or stranded		AWG	2 x (18 ... 14)		
• Terminal screws			M3 (Pozidriv size 2)		
- Tightening torque		Nm lb.in	0.8 ... 1.2 7 ... 10.3		

¹⁾ Minimum cross-section 16 mm².

²⁾ 3RT505.: When connecting cable lugs to DIN 46235, use 3RT5956-4EA1 terminal cover for conductor cross-sections of 95 mm² and more to ensure phase spacing.

³⁾ 3RT506. and 3RT507.: When connecting cable lugs to DIN 46234, the 3RT5966-4EA1 terminal cover must be used for conductor cross-sections of 240 mm² and more as well as DIN 46235 for conductor cross-sections of 185 mm² and more to keep the phase clearance.

⁴⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

SIRIUS 3RH6 Contactor Relays



3/2	SIRIUS 3RH6 contactor relays, 4-pole
3/5	SIRIUS 3RH61 coupling contactors for switching auxiliary circuits, 4-pole
3/6	Technical specifications

SIRIUS 3RH6 Contactor Relays

SIRIUS 3RH6 contactor relays, 4-pole

Overview

Standards

IEC 60947-1,
IEC 60947-4-1,
IEC 60947-5-1

The 3RH6 contactor relays have screw terminals.

The 3RH6 contactor relays are suitable for use in any climate.
They are finger-safe according to EN 50274.

Contact reliability

High contact stability at low voltages and currents, suitable for solid-state circuits with currents ≥ 5 mA at a voltage of ≥ 17 V.

Surge suppression

RC elements, varistors, diodes or diode assemblies (combination of a diode and a Zener diode) can be plugged onto all 3RH6 contactor relays as surge suppressors. The plug-in direction is determined by a coding device.

Note:

The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are affected by the surge suppressors (diode 6 to 10 times; diode assembly 2 to 6 times, varistor +2 to 5 ms).

Article No. scheme

Digit of the article No.	1st - 3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	
	□□□	□	□	□	□	–	□	□	□	□	□
Contactor relays	3 R H										
SIRIUS		6									
Device type (1 = 4-pole contactor relay)			□								
Number of NO contacts (e.g. 2 = 2 NO)				□							
Number of NC contacts (e.g. 2 = 2 NC)					□						
Connection type (1 = screw)						1					
Operating range / solenoid coil circuit (e.g. A = AC standard / without)							□				
Rated control supply voltage (e.g. P0 = 230 V, 50 Hz)								□	□		
No significance										□	
Example	3 R H	6	1	2	2	–	1	A	P	0	0

Note:

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

Accessories

The accessories for the 3RT6 contactors in size S00 can also be used for the 3RH6 contactor relays (see Chapter 2).

Auxiliary switch blocks

The 3RH61 contactor relays can be expanded by up to four contacts by the addition of snap-on auxiliary switch blocks.

The auxiliary switch block can easily be snapped onto the front of the contactor relays. The auxiliary switch block has a centrally positioned release lever for disassembly.

All contactor relays with the identification numbers 40E, 31E and 22E can be extended with auxiliary switch blocks to obtain contactor relays with 5 to 8 contacts.

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

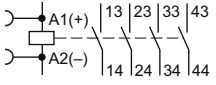
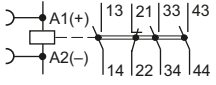
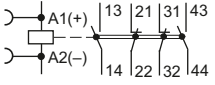
Selection and ordering data

AC operation

Size S00



3RH61...-1B.40

Rated operational current I_e /AC-15/AC-14 at 230 V	Contacts Ident. No.	Version	Rated control supply voltage U_s at 50/60 Hz ¹⁾	Article No.
		 NO  NC	V AC	
For screw fixing and snap-on mounting onto TH 35 standard mounting rail				
Terminal designations according to EN 50011				
4 NO, Ident. No. 40E 	3 NO + 1 NC, Ident. No. 31E 	2 NO + 2 NC, Ident. No. 22E 		
10	40E	4	--	24 110 220
	31E	3	1	24 110 220
	22E	2	2	24 110 220
				3RH6140-1AB00 3RH6140-1AF00 3RH6140-1AN20 3RH6131-1AB00 3RH6131-1AF00 3RH6131-1AN20 3RH6122-1AB00 3RH6122-1AF00 3RH6122-1AN20

¹⁾ Coil operating range
at 50 Hz: 0.8 to 1.1 x U_s
at 60 Hz: 0.85 to 1.1 x U_s

Other voltages on request.

Accessories see "SIRIUS 3RT6/3RT5 Contactors", Chapter 2.

SIRIUS 3RH6 Contactor Relays

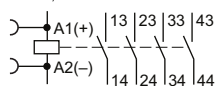
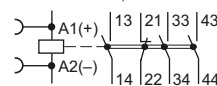
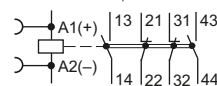
SIRIUS 3RH6 contactor relays, 4-pole

DC operation

Size S00



3RH61...1B.40

Rated operational current I_N /AC-15/AC-14 at 230 V	Contacts		Rated control supply voltage U_s	Article No.
A	Ident. No.	Version		
				
		NO	NC	V DC
	For screw fixing and snap-on mounting onto TH 35 standard mounting rail			
Terminal designations according to EN 50011				
4 NO, Ident. No. 40E 	3 NO + 1 NC, Ident. No. 31E 		2 NO + 2 NC, Ident. No. 22E 	
10	40E	4 --	24 220	3RH6140-1BB40 3RH6140-1BM40
	31E	3 1	24 220	3RH6131-1BB40 3RH6131-1BM40
	22E	2 2	24 220	3RH6122-1BB40 3RH6122-1BM40

Other voltages on request.

Accessories [see "SIRIUS 3RT6/3RT5 Contactors", Chapter 2.](#)

Selection and ordering data

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

3RH61...-1K.40

Rated operational current
 I_e /AC-15/ AC-14
 at **230 V**

Auxiliary contacts
 Ident. No. acc. to
 EN 50011

Version

Rated control
 supply voltage U_s

Article No.

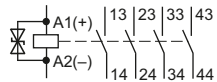
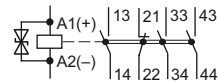
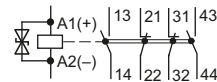
A

NO NC

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

Size S00**With integrated surge suppressor (suppressor diode)**

(auxiliary switch blocks cannot be mounted)

4 NO, Ident. No. **40E**3 NO + 1 NC, Ident. No. **31E**2 NO + 2 NC, Ident. No. **22E**Rated control supply voltage $U_s = 24$ V DC,operating range **0.7 to 1.25 x U_s** Power consumption of the solenoid coils **2.8 W** at 24 V**10****40E**

4

--

24
110
3RH6140-1KB40
3RH6140-1KF40
31E

3

1

24
110
3RH6131-1KB40
3RH6131-1KF40
22E

2

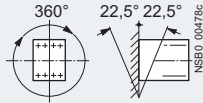
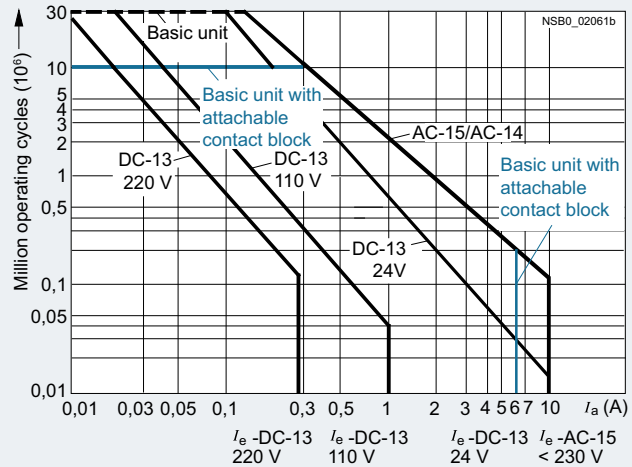
2

24
110
3RH6122-1KB40
3RH6122-1KF40

SIRIUS 3RH6 Contactor Relays

Technical specifications

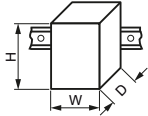
Technical specifications

Contactor relays	Type Size	3RH6 S00
Permissible mounting position		
The contactor relays are designed for operation on a vertical mounting surface.		
Upright mounting position		 Special version required (3RH6122-2K.40 coupling relays and contactor relays with extended operating range on request)
Positively-driven operation of contacts in contactor relays		
3RH6: Yes, in the basic unit and the auxiliary switch block as well as between the basic unit and the front-mounted auxiliary switch block (removable) according to IEC 60947-5-1, Appendix L		Explanations: There is positively-driven operation if it is ensured that the NC and NO contacts cannot be closed at the same time. IEC 60947-5-1, Appendix L Low-voltage switchgear and controlgear, Special requirements for positively-driven contacts
Contact reliability		
Contact reliability at 17 V, 5 mA acc. to IEC 60947-5-4		Frequency of contact faults $< 10^{-8}$ i.e. < 1 fault per 100 million operating cycles
Contact endurance for AC-15/AC-14 and DC-13 utilization categories		
The contact endurance is mainly dependent on the breaking current. It is assumed that the operating mechanisms are switched randomly, i.e. not synchronized with the phase angle of the supply system. If magnetic circuits other than the contactor coil systems or solenoid valves are present, e.g. magnetic brakes, protective measures for the load circuits are necessary, e.g. in the form of RC elements and free-wheel diodes. The characteristic curves apply to: • 3RH61 contactor relays¹⁾ • 3RH6911 auxiliary switch blocks¹⁾ • Auxiliary switch blocks for snapping onto the front, max. 4-pole and for mounting onto the side in size S00		 Diagram legend: I_a = Breaking current I_e = Rated operational current

¹⁾ 3RH6911: $I_e = 6$ A for AC-15/AC-14 and DC-13.

SIRIUS 3RH6 Contactor Relays

Technical specifications

Type			3RH61
Size			S00
Dimensions (W x H x D) with screw terminals		mm	45 x 57.5 x 73
With mounted auxiliary switch block		mm	45 x 57.5 x 116
General technical specifications			
Mechanical endurance			
Basic units	Operating cycles	30 million	
Basic unit with snap-on auxiliary switch block	Operating cycles	10 million	
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 contacts in the basic unit acc. to IEC 60947-1, Appendix N	V	400	
Permissible ambient temperature			
During operation	°C	-25 ... +60	
During storage	°C	-55 ... +80	
Degree of protection acc. to IEC 60947-1, Appendix C	IP20		
Touch protection acc. to EN 50274	Finger-safe		
Shock resistance			
Rectangular pulse	- AC operation	g/ms	7.3/5 and 4.7/10
	- DC operation	g/ms	10/5 and 5/10
Sine pulse	- AC operation	g/ms	11.4/5 and 7.3/10
	- DC operation	g/ms	15/5 and 8/10
Conductor cross-sections			
Auxiliary conductors and coil terminals (1 or 2 conductors can be connected)		 Screw terminals	
Solid or stranded	mm ²	2 x (0.5 ... 1.5) ¹⁾ , 2 x (0.75 ... 2.5) ¹⁾ , max. 2 x 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⁾	
Terminal screw		M3 (for Pozidriv size 2, Ø 5 ... 6 mm)	
Tightening torque	Nm	0.8 ... 1.2 (7 ... 10.3 lb.in)	

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

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

SIRIUS 3RH6 Contactor Relays

Technical specifications

Contactor relays	Type	3RH6.	
	Size	S00	
Load side			
Load rating with AC			
Rated operational currents I_e			
AC-12	A	10	
AC-15/AC-14 for rated operational voltage U_s	Up to 230 V	A	10
	400 V	A	3
	690 V	A	1
Load rating with DC			
Rated operational currents I_e			
DC-12 for rated operational voltage U_s			
• 1 conducting path	24 V	A	6
	60 V	A	6
	110 V	A	3
	220 V	A	1
	440 V	A	0.3
• 2 conducting paths in series	24 V	A	10
	60 V	A	10
	110 V	A	4
	220 V	A	2
	440 V	A	1.3
• 3 conducting paths in series	24 V	A	10
	60 V	A	10
	110 V	A	10
	220 V	A	3.6
	440 V	A	2.5
DC-13 for rated operational voltage U_s			
• 1 conducting path	24 V	A	6
	60 V	A	2
	110 V	A	1
	220 V	A	0.3
	440 V	A	0.14
• 2 conducting paths in series	24 V	A	10
	60 V	A	3.5
	110 V	A	1.3
	220 V	A	0.9
	440 V	A	0.2
• 3 conducting paths in series	24 V	A	10
	60 V	A	4.7
	110 V	A	3
	220 V	A	1.2
	440 V	A	0.5
Switching frequency			
Switching frequency z in operating cycles/hour			
• For rated operation	AC-12/DC-12	h^{-1}	1 000
• For utilization category	AC-15/AC-14	h^{-1}	1 000
	DC-13	h^{-1}	1 000
• No-load switching frequency		h^{-1}	10 000
Dependence of the switching frequency z' on the operational current I' and operational voltage U' :			
$z' = z \cdot I_e / I' \cdot (U_e / U')^{1.5} \cdot 1/h$			

SIRIUS 3RU6/3RU5 Thermal Overload Relays



4/2	Introduction
4/3	General data
4/5	3RU61 up to 40 A for standard applications
4/6	3RU51 up to 500 A for standard applications
4/7	Accessories
4/9	Technical specifications

SIRIUS 3RU6/3RU5 Thermal Overload Relays

Introduction

Overview



Type	3RU61	3RU51	3RU5156	3RU5166	3RU5176
SIRIUS overload relays					
Applications					
• System protection	✓ ¹⁾	✓ ¹⁾	✓ ¹⁾	✓ ¹⁾	✓ ¹⁾
• Motor protection	✓	✓	✓	✓	✓
• Alternating current, three-phase	✓	✓	✓	✓	✓
• Alternating current, single-phase	✓	✓	✓	✓	✓
• Direct current	✓	✓	✓	--	--
Size contactor	S00, S0	S2, S3	S6	S10	S12
Rated operational current I_e					
• Size S00	A Up to 16	--	--	--	--
• Size S0	A Up to 40	--	--	--	--
• Size S2	A --	Up to 50	--	--	--
• Size S3	A --	Up to 100	--	--	--
• Size S6	A --	--	Up to 205	--	--
• Size S10	A --	--	--	Up to 320	--
• Size S12	A --	--	--	--	Up to 500
Rated operational voltage U_e	V 690 AC	690/1 000 AC ²⁾	1 000	1 000	1 000
Rated frequency	Hz 50/60	50/60	50/60	50/60	50/60
Trip class	CLASS 10	CLASS 10	CLASS 10	CLASS 10	CLASS 10
Thermal overload releases	A	0.11 ... 0.16 up to	5.5 ... 8 up to	140 ... 320	280 ... 500
	A	34 ... 40	80 ... 100		
Rating for three-phase motor at 400 V AC	kW	0.04 ... 18.5	3 ... 45	55 ... 90	110 ... 160
Pages	4/5	4/6			

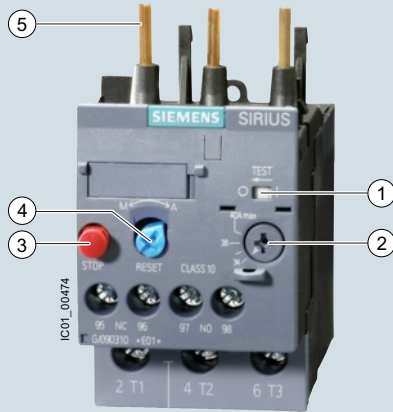
Accessories							
For sizes	S00	S0	S2	S3	S6	S10	S12
Terminal supports for stand-alone installation	✓	✓	✓	✓	✓	✓	✓
Mechanical RESET	✓	✓	✓	✓	✓	✓	✓
Cable releases for RESET	✓	✓	✓	✓	✓	✓	✓
Electrical remote RESET	✓	✓	✓	✓	--	--	--
Terminal covers	✓	✓	✓	✓			
• Three-pole					--	✓	✓
• Single-pole					✓ ²⁾	✓ ²⁾	✓ ²⁾
Sealable covers for setting knobs	✓	✓	Integrated in the unit		--	--	--
Connecting busbars							
• Ribbon cable					✓ ²⁾	--	--
• Busbars					✓	✓	✓
Pages	4/7						

- ✓ Has this function or can use this accessory
 -- Does not have this function or cannot use this accessory

¹⁾ The units are responsible in the main circuit for overload protection of the assigned electrical loads (e.g. motors), feeder cable, and other switching and protection devices in the respective load feeder.

²⁾ Not for 3RU5156-3NB2.

Overview



- ① Switch position indicator and TEST function of the wiring:
Indicates a trip and enables the wiring test.
- ② Motor current setting:
Setting the device to the rated motor current is easy with the large rotary knob.
- ③ STOP button:
If the STOP button is pressed, the NC contact is opened. This switches off the contactor downstream. The NC contact is closed again when the button is released.
- ④ Selector switch for manual/automatic RESET and RESET button:
With this switch you can choose between manual and automatic RESET. A device set to manual RESET can be reset locally by pressing the RESET button. A remote RESET is possible using the RESET modules (accessories), which are independent of size.
- ⑤ Connection for mounting onto contactors:
Optimally adapted in electrical, mechanical and design terms to the contactors. The overload relay can be connected directly to the contactor using these pins. Stand-alone installation is possible as an alternative (in conjunction with a terminal bracket for stand-alone installation).

A sealable transparent cover can be optionally mounted (accessory). It secures the motor current setting against adjustment.

The 3RU61 thermal overload relays up to 40 A have been designed for inverse-time delayed protection of loads with normal starting against excessive temperature rises due to overload or phase failure.

An overload or phase failure results in an increase of the motor current beyond the set rated motor current. Via heating elements, this current rise heats up the bimetal strips inside the device which then bend and as a result trigger the auxiliary contacts by means of a tripping mechanism. The auxiliary contacts then switch off the load by means of a contactor. The break time depends on the ratio between the tripping current and current setting I_e and is stored in the form of a long-term stable tripping characteristic.

The "tripped" status is signaled by means of a switch position indicator. Resetting takes place either manually or automatically after a recovery time has elapsed.

SIRIUS 3RU6126-4FB0 thermal overload relay

Article No. scheme

Digit of the Article No.	1st - 3rd □□□	4th □	5th □	6th □	7th □	–	8th □	9th □	10th □	11th □
Thermal overload relays	3 R U									
SIRIUS		6								
Device series			1							
Size, rated operational current and power				□	□					
Setting range of the overload release							□	□		
Connection methods									B	
Installation type										□
Example	3 R U	6	1	1	6	–	0	A	B	0

Note:

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

For your orders, please use the article numbers quoted in the catalog in the Selection and ordering data.

SIRIUS 3RU6/3RU5 Thermal Overload Relays

General data

Application

Industries

The 3RU61 and 3RU51 thermal overload relays are suitable for customers from all industries who want to guarantee optimum inverse-time delayed protection of their electrical loads (e.g. motors) under normal starting conditions (CLASS 10).

Application

The 3RU thermal overload relays have been designed for the protection of three-phase and single-phase AC and DC motors.

If single-phase AC or DC loads are to be protected by the 3RU thermal overload relays, all three bimetal strips must be heated. For this purpose, all main current paths of the relay must be connected in series.

Ambient conditions

The 3RU thermal overload relays have temperature compensation according to IEC 60947-4-1 for the temperature range of -40 to +60 °C¹⁾. For temperatures from +60 to +70 °C, the upper set value of the setting range must be reduced by the factor listed in the table below.

Ambient temperature °C	Derating factor for the upper set value			
	Current ranges			
	0.11 ... 20 A	17 ... 40 A	55 ... 205 A	140 ... 320 A/ 280 ... 500 A
+55	--	--	1.0	--
+60	1.0	1.0	0.94	1.0
+65	0.94	0.97	0.88	0.94
+70	0.87	0.94	0.82	0.87

¹⁾ 55 °C for 3RU5156...

SIRIUS 3RU6/3RU5 Thermal Overload Relays

3RU61 up to 40 A for standard applications

Selection and ordering data

3RU61 thermal overload relays for mounting onto contactor or for stand-alone installation, CLASS 10

Features and technical specifications:

- Screw terminals
- Overload and phase failure protection
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET
- Switch position indicator
- TEST function
- STOP button



3RU6116-..B0



3RU6116-..B1



3RU6126-..B0



3RU6126-4.B1

Size contactor ¹⁾	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG ²⁾	For mounting onto contactor Article No.	For stand-alone installation Article No.
Size S00	A	A		
S00	0.11 ... 0.16	0.5	3RU6116-0AB0	3RU6116-0AB1
	0.14 ... 0.2	1	3RU6116-0BB0	3RU6116-0BB1
	0.18 ... 0.25	1	3RU6116-0CB0	3RU6116-0CB1
	0.22 ... 0.32	1.6	3RU6116-0DB0	3RU6116-0DB1
	0.28 ... 0.4	2	3RU6116-0EB0	3RU6116-0EB1
	0.35 ... 0.5	2	3RU6116-0FB0	3RU6116-0FB1
	0.45 ... 0.63	2	3RU6116-0GB0	3RU6116-0GB1
	0.55 ... 0.8	4	3RU6116-0HB0	3RU6116-0HB1
	0.7 ... 1	4	3RU6116-0JB0	3RU6116-0JB1
	0.9 ... 1.25	4	3RU6116-0KB0	3RU6116-0KB1
	1.1 ... 1.6	6	3RU6116-1AB0	3RU6116-1AB1
	1.4 ... 2	6	3RU6116-1BB0	3RU6116-1BB1
	1.8 ... 2.5	10	3RU6116-1CB0	3RU6116-1CB1
	2.2 ... 3.2	10	3RU6116-1DB0	3RU6116-1DB1
	2.8 ... 4	16	3RU6116-1EB0	3RU6116-1EB1
	3.5 ... 5	20	3RU6116-1FB0	3RU6116-1FB1
	4.5 ... 6.3	20	3RU6116-1GB0	3RU6116-1GB1
	5.5 ... 8	25	3RU6116-1HB0	3RU6116-1HB1
	7 ... 10	35	3RU6116-1JB0	3RU6116-1JB1
	9 ... 12.5	35	3RU6116-1KB0	3RU6116-1KB1
	11 ... 16	40	3RU6116-4AB0	3RU6116-4AB1
Size S0				
S0	1.8 ... 2.5	10	3RU6126-1CB0	--
	2.2 ... 3.2	10	3RU6126-1DB0	--
	2.8 ... 4	16	3RU6126-1EB0	--
	3.5 ... 5	20	3RU6126-1FB0	--
	4.5 ... 6.3	20	3RU6126-1GB0	--
	5.5 ... 8	25	3RU6126-1HB0	--
	7 ... 10	35	3RU6126-1JB0	--
	9 ... 12.5	35	3RU6126-1KB0	--
	11 ... 16	40	3RU6126-4AB0	--
	14 ... 20	50	3RU6126-4BB0	3RU6126-4BC1
	17 ... 22	63	3RU6126-4CB0	3RU6126-4CC1
	20 ... 25	63	3RU6126-4DB0	3RU6126-4DC1
	23 ... 28	63	3RU6126-4NB0	3RU6126-4NC1
	27 ... 32	80	3RU6126-4EB0	3RU6126-4EC1
	30 ... 36	80	3RU6126-4PB0	3RU6126-4PC1
	34 ... 40	80	3RU6126-4FB0	3RU6126-4FC1

¹⁾ Observe maximum rated operational current of the devices.

²⁾ Maximum protection by fuse only for overload relay, type of coordination "2". Fuse values in connection with contactors.

SIRIUS 3RU6/3RU5 Thermal Overload Relays

3RU51 up to 100 A for standard applications

Selection and ordering data

3RU51 thermal overload relays with screw terminals on the auxiliary current side for mounting onto contactor or for stand-alone installation, CLASS 10

Features and technical specifications:

- Overload and phase failure protection
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET
- Switch position indicator
- TEST function
- STOP button
- Sealable cover



3RU5136-1.B0



3RU5146-4.B0



3RU5156-2.B2



3RU5166-5.B1



3RU5176-5.B1

Size contactor ¹⁾	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG	For mounting onto contactor Article No.	For stand-alone installation Article No.
	A	A		
Size S2				
	5.5 ... 8	25	3RU5136-1HB0	--
	7 ... 10	35	3RU5136-1JB0	--
	9 ... 12.5	35	3RU5136-1KB0	--
	11 ... 16	40	3RU5136-4AB0	--
	14 ... 20	50	3RU5136-4BB0	--
	18 ... 25	63	3RU5136-4DB0	--
	22 ... 32	80	3RU5136-4EB0	--
	28 ... 40	80	3RU5136-4FB0	--
	36 ... 45	100	3RU5136-4GB0	3RU5136-4GB1
	40 ... 50	100	3RU5136-4HB0	3RU5136-4HB1
Size S3				
	18 ... 25	63	3RU5146-4DB0	--
	22 ... 32	80	3RU5146-4EB0	--
	28 ... 40	80	3RU5146-4FB0	--
	36 ... 50	125	3RU5146-4HB0	--
	45 ... 63	125	3RU5146-4JB0	3RU5146-4JB1
	57 ... 75	160	3RU5146-4KB0	3RU5146-4KB1
	70 ... 90	160	3RU5146-4LB0	3RU5146-4LB1
	80 ... 100	200	3RU5146-4MB0	3RU5146-4MB1
Size S6				
	55 ... 80	160	--	3RU5156-2HB2 ²⁾
	63 ... 90	160	--	3RU5156-2WB2 ²⁾
	80 ... 110	200	--	3RU5156-2XB2 ²⁾
	90 ... 120	224	--	3RU5156-3HB2 ²⁾
	110 ... 135	224	--	3RU5156-3JB2 ²⁾
	120 ... 150	250	--	3RU5156-3KB2 ²⁾
	135 ... 160	250	--	3RU5156-3LB2 ²⁾
	150 ... 180	250	--	3RU5156-3MB2 ²⁾
	170 ... 205	250	--	3RU5156-3NB2 ²⁾
Size S10				
	140 ... 200	400	--	3RU5166-5EB1
	180 ... 250	400	--	3RU5166-5FB1
	220 ... 320	400	--	3RU5166-5GB1
Size S12				
	280 ... 400	500	--	3RU5176-5HB1
	350 ... 500	500	--	3RU5176-5JB1

¹⁾ Observe maximum rated operational current of the devices.

²⁾ For contactor mounting use auxiliary part 3RU5956-3AA01.

Overview

The following optional accessories are available for the 3RU6/3RU5 thermal overload relays:

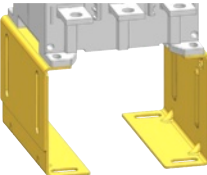
- Terminal support for stand-alone installation with screw or spring-type terminals for every size
- Mechanical RESET (for all sizes)
- Cable release for resetting devices which are difficult to access (for all sizes)

Selection and ordering data

	Version	Size	Article No.	
Terminal supports for stand-alone installation				
	For stand-alone mounting of the overload relays; screw and snap-on mounting onto TH 35 standard mounting rail; size S3 also for TH 75 standard mounting rail	S00	3RU6916-3AA01	
		S0	3RU6926-3AA01	
		S2	3RU5936-3AA01	
		S3	3RU5946-3AA01	
3RU6926-3AA01				
Mechanical RESET				
	Resetting plungers, holders and formers	S00, S0, S6, S10, S12	3RU6900-1A	
		S2, S3	3RU5900-1A	
	Pushbuttons with extended stroke (12 mm), IP65, Ø 22 mm	S00, S0, S2, S3, S6, S10, S12	3SB3000-0EA11	
	Extension plungers For compensation of the distance between the pushbutton and the unlatching button of the relay	S00, S0, S2, S3, S6, S10, S12	3SX1335	
3RU6900-1A with pushbutton and extension plunger				
Cable releases with holder for RESET				
	For Ø 6.5 mm holes in the control panel; max. control panel thickness 8 mm	• Length 400 mm	S00, S0, S6, S10, S12	3RU6900-1B
			S2, S3	3RU5900-1B
	• Length 600 mm	S00, S0, S6, S10, S12	3RU6900-1C	
		S2, S3	3RU5900-1C	
3RU6900-1.				
Terminal covers				
	Terminal covers for cable lugs and busbar connection	S10/S12	3RT5966-4EA1	
		S6 ¹⁾	3TX6526-3B	
3RT5966-4EA1				
				
3TX6526-3B				

SIRIUS 3RU6/3RU5 Thermal Overload Relays

Accessories

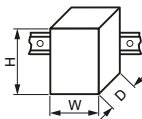
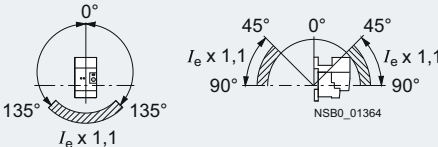
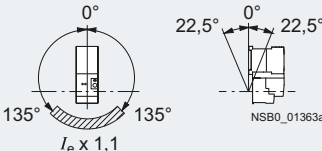
Version		Size	Article No.
Busbars			
 3UX1210	For contactor connecting	S6 ¹⁾	3UX1210
		S6	3RU5956-5AA01
		S10/S12	3RU5966-5AA01
 3RU5956-5AA01			
 3RU5966-5AA01			
Overload relay adaptor bracket			
 3RU5956-3AA01	Adjustable base for device	S6	3RU5956-3AA01
		S10/S12	3RU5966-3AA01
 3RU5966-3AA01			

¹⁾ Not applicable for 3RU5156-3NB2.

SIRIUS 3RU6/3RU5 Thermal Overload Relays

Technical specifications

Technical specifications

Type Size Dimensions (W x H x D) (overload relay with stand-alone installation support)		3RU6116 S00 45 x 89 x 80	3RU6126 S0 45 x 97 x 95	3RU5136 S2 55 x 105 x 118	3RU5146 S3 70 x 120 x 140
General data					
Trips in the event of		Overload and phase failure			
Trip class acc. to IEC 60947-4-1	CLASS	10			
Reset and recovery • Reset options after tripping • Recovery time - For automatic RESET - For manual RESET		min min	Manual, Automatic Depends on the strength of the tripping current and characteristic Depends on the strength of the tripping current and characteristic		
Features • Display of operating state on device • TEST function • RESET button • STOP button			Yes, by means of TEST function/switch position indicator slide Yes Yes Yes		
Ambient temperature • Storage/transport • Operation • Temperature compensation • Permissible rated current at - Temperature inside control cabinet 60 °C - Temperature inside control cabinet 70 °C		°C °C °C % %	-55 ... +80 -40 ... +70 Up to 60 100 (over +60 °C current reduction is not required) 87		
Repeat terminals • Coil repeat terminals • Auxiliary contact repeat terminal		Yes Yes	Not required Not required		
Degree of protection acc. to IEC 60529		IP20		IP20 (terminal compartment: IP00 degree of protection)	
Touch protection acc. to IEC 61140		Finger-safe for vertical contact from the front			
Shock resistance with sine acc. to IEC 60068-2-27	g/ms	15/11 (auxiliary contacts 95/96 and 97/98: 8 g/11 ms)		8/10	
Resistance to extreme climates – air humidity	%	90		100	
Installation altitude above sea level		m	Up to 2 000; above this on request		
Mounting position		The diagrams show the permissible mounting positions for mounting onto contactors and stand-alone installation. For mounting position in the hatched area, a setting correction of 10 % must be implemented. Stand-alone installation:  Contactor + overload relay: 			
Type of mounting		Mounting onto contactor/stand-alone installation with terminal support For screw and snap-on mounting onto TH 35 standard mounting rail.		Direct mounting/stand-alone installation with terminal support For screw and snap-on mounting onto TH 35 standard mounting rail; size S3 also for TH 75 standard mounting rail.	

SIRIUS 3RU6/3RU5 Thermal Overload Relays

Technical specifications

Type		3RU6116	3RU6126	3RU5136	3RU5146
Size		S00	S0	S2	S3
Main circuit					
Rated insulation voltage U_i (pollution degree 3)	V	690			1 000
Rated impulse withstand voltage U_{imp}	kV	6			8
Rated operational voltage U_e	V	690			1 000
Type of current					
• Direct current		Yes			
• Alternating current		Yes, frequency range up to 400 Hz			
Current setting	A	0.11 ... 0.16	1.8 ... 2.5	5.5 ... 8	18 ... 25
	A	up to 11 ... 16	up to 34 ... 40	up to 40 ... 50	up to 80 ... 100
Power loss per unit (max.)	W	4.1 ... 6.3	6.2 ... 7.5	6 ... 9	10 ... 16.5
Protective separation between main and auxiliary current paths acc. to IEC 60947-1	V	440	690: Setting ranges ≤ 25 A	500	690
Conductor cross-sections of main circuit					
Connection type		 Screw terminals			
Terminal screw		M3, Pozidriv size 2	M4, Pozidriv size 2	M6, Pozidriv size 2	M8, 4 mm hexagon socket screw
Operating devices	mm	Ø 5 ... 6	Ø 5 ... 6	Ø 5 ... 6	4 mm hexagon socket screw
Prescribed tightening torque	Nm	0.8 ... 1.2	2 ... 2.5	3 ... 4.5	4 ... 6
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected					
• Solid	mm ²	2 x (0.5 ... 1.5) ¹⁾ , 2 x (0.75 ... 2.5) ¹⁾ , max. 2 x 4	2 x (1 ... 2.5) ¹⁾ , 2 x (2.5 ... 10) ¹⁾	2 x (0.75 ... 16)	2 x (2.5 ... 16)
• Finely stranded with end sleeves (DIN 46228-1)	mm ²	2 x (0.5 ... 1.5) ¹⁾ , 2 x (0.75 ... 2.5) ¹⁾	2 x (1 ... 2.5) ¹⁾ , 2 x (2.5 ... 6) ¹⁾ , max. 1 x 10	2 x (0.75 ... 16), 1 x (0.75 ... 25)	2 x (2.5 ... 35), 1 x (2.5 ... 50)
• AWG cables, solid or stranded	AWG	2 x (20 ... 16) ¹⁾ , 2 x (18 ... 14) ¹⁾ , 2 x 12	2 x (16 ... 12) ¹⁾ , 2 x (14 ... 8) ¹⁾	2 x (18 ... 3), 1 x (18 ... 1)	2 x (10 ... 1/0), 1 x (10 ... 2/0)
• Ribbon cable conductors (Number x Width x Thickness) mm	--	--	--	2 x (6 x 9 x 0.8)	2 x (6 x 9 x 0.8)

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

SIRIUS 3RU6/3RU5 Thermal Overload Relays

Technical specifications

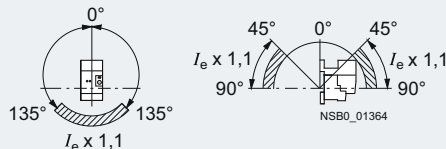
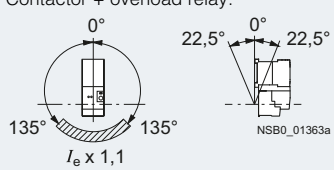
Type		3RU6116	3RU6126	3RU5136	3RU5146
Size		S00	S0	S2	S3
Auxiliary circuit					
Number of NO contacts		1			
Number of NC contacts		1			
Auxiliary contacts – assignment		1 NO for the signal "tripped"; 1 NC for disconnecting the contactor			
Rated insulation voltage U_i (pollution degree 3)	V	690			
Rated impulse withstand voltage U_{imp}	kV	6			
Contact rating of the auxiliary contacts					
• NC contact with alternating current AC-14/AC-15, rated operational current I_e at U_e :					
- 24 V	A	4			
- 120 V	A	4			
- 125 V	A	4			
- 230 V	A	3			
- 400 V	A	2			
- 600 V	A	0.75			
- 690 V	A	0.75			
• NO contact with alternating current AC-14/AC-15, rated operational current I_e at U_e :					
- 24 V	A	3			
- 120 V	A	3			
- 125 V	A	3			
- 230 V	A	2			
- 400 V	A	1			
- 600 V	A	0.75			
- 690 V	A	0.75			
• NC contact, NO contact with direct current DC-13, rated operational current I_e at U_e :					
- 24 V	A	1			
- 60 V	A	On request			
- 110 V	A	0.22			
- 125 V	A	0.22			
- 220 V	A	0.11			
• Conventional thermal current I_{th}		A	6		
• Contact reliability (suitability for PLC control; 17 V, 5 mA)			Yes		
Protective separation between auxiliary current paths acc. to IEC 60947-1	V	440			
CSA, UL, UR rated data					
Auxiliary circuit – switching capacity		B600, R300			
Conductor cross-sections for auxiliary circuit					
Connection type		⊕ Screw terminals			
Terminal screw		M3, Pozidriv size 2			
Operating devices	mm	Ø 5 ... 6			
Prescribed tightening torque	Nm	0.8 ... 1.2			
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected					
• Solid	mm ²	2 x (0.5 ... 1.5) ²⁾ , 2 x (0.75 ... 2.5) ²⁾			
• Finely stranded with end sleeves (DIN 46228-1)	mm ²	2 x (0.5 ... 1.5) ²⁾ , 2 x (0.75 ... 2.5) ²⁾			
• AWG cables, solid or stranded	AWG	2 x (20 ... 16) ²⁾ , 2 x (18 ... 14) ²⁾		2 x (18 ... 14)	

1) Up to $I_k \leq 0.5$ kA; $U \leq 260$ V.

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

SIRIUS 3RU6/3RU5 Thermal Overload Relays

Technical specifications

Type		3RU5156	3RU5166	3RU5176
Size		S6	S10	S12
Dimensions (W x H x D)	mm	104 x 106 x 149	145 x 178 x 152.5	145 x 178 x 152.5
General data				
Trips in the event of		Overload and phase failure		
Trip class acc. to IEC 60947-4-1	CLASS	10		
Reset and recovery		Manual, Automatic and Remote RESET (Remote RESET in combination with the corresponding accessories)		
• Reset options after tripping				
• Recovery time	min	Depends on the strength of the tripping current and characteristic		
- For automatic RESET	min	Depends on the strength of the tripping current and characteristic		
- For manual RESET				
Features		Yes		
• Display of operating state on device		Yes		
• TEST function		Yes		
• RESET button		Yes		
• STOP button		Yes		
Ambient temperature				
• Storage/transport	°C	-55 ... +80	-55 ... +80	
• Operation	°C	-25 ... +55	-20 ... +60	
• Temperature compensation	°C	70	80	
• Permissible rated current at				
- Temperature inside control cabinet 60 °C	%	94	100	
- Temperature inside control cabinet 70 °C	%	82	87	
Repeat terminals		--		
• Coil repeat terminals		--		
• Auxiliary contact repeat terminal		--		
Degree of protection acc. to IEC 60529		IP00(open), IP20 (terminal cover)		
Touch protection acc. to IEC 61140		Finger-safe (terminal cover)		
Shock resistance with sine acc. to IEC 60068-2-27	g/ms	8/10		
Resistance to extreme climates – air humidity	%	90	100	
Installation altitude above sea level	m	Up to 2 000; above this on request		
Mounting position		The diagrams show the permissible mounting positions for mounting onto contactors and stand-alone installation. For mounting position in the hatched area, a setting correction of 10 % must be implemented. Stand-alone installation:  NSB0_01364 Contactor + overload relay:  NSB0_01363a		
Type of mounting		Direct mounting/ mounting with contactor	Direct mounting	Direct mounting

¹⁾ For 3RU51 56-3NB2, M8 and M10 screw are needed.

SIRIUS 3RU6/3RU5 Thermal Overload Relays

Technical specifications

Type		3RU5156	3RU5166	3RU5176
Size		S6	S10	S12
Main circuit				
Rated insulation voltage U_i (pollution degree 3)	V	1000		
Rated impulse withstand voltage U_{imp}	kV	8		
Rated operational voltage U_e	V	1000		
Type of current		Yes	No	
• Direct current		Yes, frequency range up to 400 HZ		
• Alternating current				
Current setting	A	55 ... 80 up to 170 ... 205	140 ... 200 up to 220 ... 320	280 ... 400 up to 350 ... 500
Power loss per unit (max.)	W	24	21	36
Protective separation between main and auxiliary current paths acc. to IEC 60947-1	V	1000		
Conductor cross-sections of main circuit				
Connection type		 Screw terminals		
Terminal screw		M8 (hexagon socket) ¹⁾	M10 (hexagon socket)	M10 (hexagon socket)
Prescribed tightening torque	Nm	10...14	14...24	14...24
Conductor cross-sections (min./max.) 1 or 2 conductors can be connected				
• Finely stranded with end sleeve	mm ²	2 × (35...95)	2 × (35...150)	2 × (35...150)
• AWG cables, solid or stranded	AWG	2 × (1/0 to 250) kcmil	2 × (1/0 to 500) kcmil	2 × (1/0 to 500) kcmil
• Ribbon cable conductors/busbar (Number x Width x Thickness)	mm	2 × (20×3)	2 × 25 × 6	2 × 25 × 6
Auxiliary circuit				
Number of NO contacts		1		
Number of NC contacts		1		
Auxiliary contacts – assignment		1 NO for the signal "tripped"; 1 NC for disconnecting the contactor		
Rated insulation voltage U_i (pollution degree 3)	V	690		
Rated impulse withstand voltage U_{imp}	kV	8		
Contact rating of the auxiliary contacts				
• NC contact with alternating current AC-14/AC-15, rated operational current I_e at U_e :				
- 24 V	A	4		
- 120 V	A	4		
- 125 V	A	4		
- 230 V	A	3		
- 400 V	A	2		
- 600 V	A	0.75		
- 690 V	A	0.75		
• NO contact with alternating current AC-14/AC-15, rated operational current I_e at U_e :				
- 24 V	A	3		
- 120 V	A	3		
- 125 V	A	3		
- 230 V	A	2		
- 400 V	A	1		
- 600 V	A	0.75		
- 690 V	A	0.75		
• NC contact, NO contact with direct current DC-13, rated operational current I_e at U_e :				
- 24 V	A	1		
- 60 V	A	On request		
- 110 V	A	0.22		
- 125 V	A	0.22		
- 220 V	A	0.11		
• Conventional thermal current I_{th}	A	6		
• Contact reliability		suitability for solid circuit; 17 V, 5 mA		
Protective separation between auxiliary current paths acc. to IEC 60947-1	V	≥ 440		

SIRIUS 3RU6/3RU5 Thermal Overload Relays

Technical specifications

Type		3RU5156	3RU5166	3RU5176
Size		S6	S10	S12
Conductor cross-sections for auxiliary circuit				
Connection type		 Screw terminals		
Terminal screw		M3, Pozidriv size 2		
Prescribed tightening torque	Nm	0.8...1.2		
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected				
• Solid	mm ²	2×(0.5 ... 1.5) ¹⁾ , 2×(0.75 ... 2.5) ¹⁾		
• Finely stranded with end sleeve	mm ²	2×(0.5 ... 1.5) ¹⁾ , 2×(0.75 ... 2.5) ¹⁾		
• AWG cables, solid or stranded	AWG	2×(20 ... 16) ¹⁾ , 2×(18 ... 14) ¹⁾		

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

Get more information

Control Products:

www.siemens.com/answers/cn/zh/

Technical support and hotline

Telephone: +86-10-64719990

Website:

<https://support.industry.siemens.com/cs/cn/zh/>

E-Mail: 4008104288.cn@siemens.com

Siemens Ltd., China
No. 7 Wangjing Zhonghuan Nanlu
Chaoyang District
Beijing 100102, P.R. China
Telephone: 400 616 2020
Mail: contact.slc@siemens.com

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