

# Industrial Controls

SIRIUS 3R\_1\* in sizes S00/S0 to S12

Catalog Add-On IC 10 AO · 2012



## SIRIUS

Answers for industry.

**SIEMENS**

# Controls – Contactors and Contactor Assemblies– Contactor Relays and Relays

# 5



## Price Groups

PG 41A, 41B, 41H

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4- and 8-pole

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4-pole

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4-pole

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# Controls – Contactors and Contactor Assemblies

## Introduction

### Overview

#### The advantages at a glance



**S00**  
3RH11



**S00**  
3RH12

Size  
Type

#### 3RH1 contactor relays

**4-pole** • Screw terminals or spring-type terminals

**8-pole** 3RH11 5/5, 5/6

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#### Accessories for 3RH1 contactor relays

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**Surge suppressors** • On front 3RT19 16 5/8

**Additional load modules** • On front 3RT19 16 5/8

Order No. Page

#### Connection methods

The contactor relays are available with screw terminals (box terminals) or with spring-type terminals.



Screw terminals

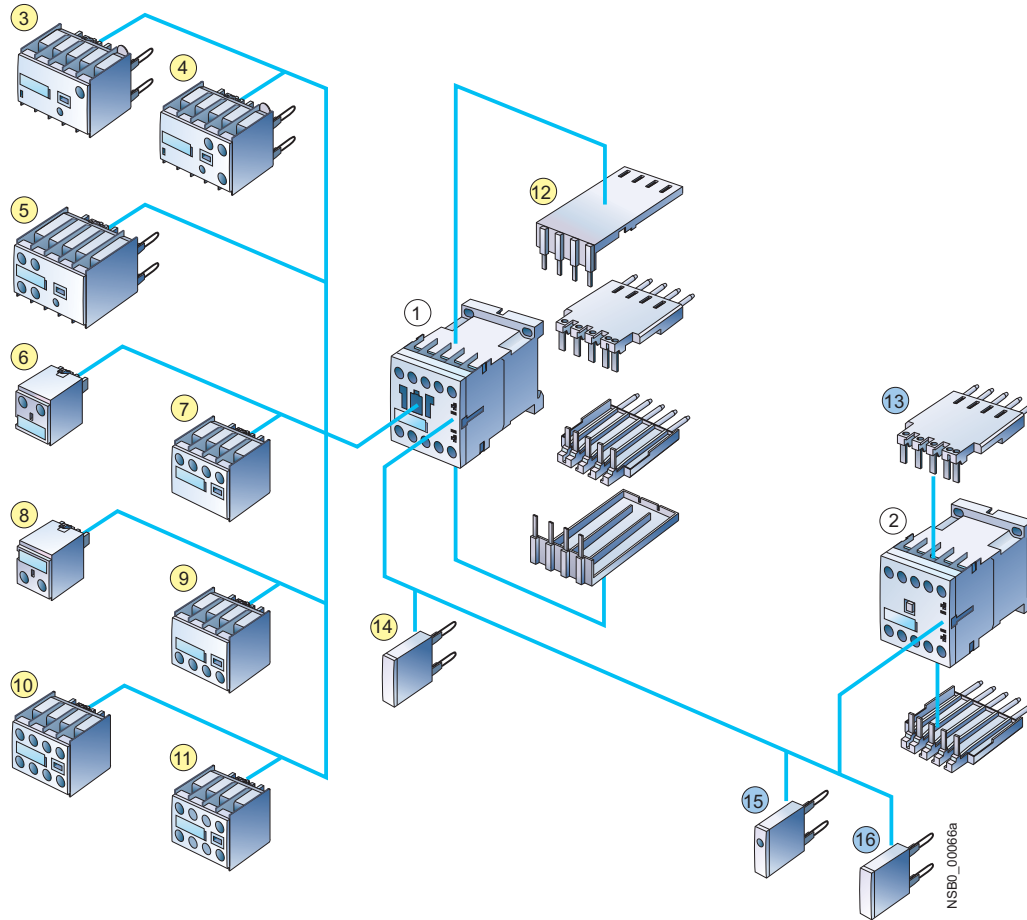


Spring-type terminals

The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

### Overview

#### Contactor relays and coupling relays, size S00, with accessories



- ① Contactor relay
- ② Coupling relay for auxiliary circuits
- ③ Solid-state timing relay block, with ON-delay
- ④ Solid-state timing relay block, with OFF-delay
- ⑤ Auxiliary switch block, with solid-state time-delay (versions: ON or OFF-delay)
- ⑥ 1-pole auxiliary switch block, cable entry from above
- ⑦ 2-pole auxiliary switch block, cable entry from above
- ⑧ 1-pole auxiliary switch block, cable entry from below
- ⑨ 2-pole auxiliary switch block, cable entry from below
- ⑩ 4-pole auxiliary switch blocks (terminal designations according to EN 50011 or EN 50005)
- ⑪ 2-pole auxiliary switch block, standard version or solid-state compatible version (terminal designations according to EN 50005)
- ⑫ Solder pin adapter for contactor relays with 4-pole auxiliary switch block
- ⑬ Solder pin adapters for contactor relays and coupling relays
- ⑭ Additional load modules for increasing the permissible residual current
- ⑮ Surge suppressors with LED
- ⑯ Surge suppressors without LED

# Contactor Relays

## SIRIUS 3RH1 contactor relays, 4- and 8-pole

### Standards

IEC 60947-1, EN 60947-1,  
IEC 60947-5-1, EN 60947-5-1.

The 3RH1 contactor relays are suitable for use in any climate. They are finger-safe according to EN 50274.

The 3RH1 contactor relays have screw terminals or spring-type terminals. Four contacts are available in the basic unit. For expansions see "Accessories" on page 5/7.

### Contact reliability

High contact stability at low voltages and currents, suitable for solid-state circuits with currents  $\geq 1$  mA at a voltage of  $\geq 17$  V.

### Surge suppression

RC elements, varistors, diodes or diode assemblies (combination of a diode and a Zener diode) can be plugged onto all contactor relays from the front for damping opening surges in the coil. 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 attenuated against voltage peaks (noise suppression diode 6 to 10 times; diode assembly 2 to 6 times, varistor +2 to 5 ms).

### Auxiliary switch blocks

The 3RH1 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 contactors. The auxiliary switch block has a centrally positioned release lever for disassembly.

The contactor relays with 4 contacts with Ident. No. 40E according to EN 50011 can be extended with 3RH19 11-1GA .. auxiliary switch blocks to obtain contactor relays with 8 contacts according to EN 50011. The Ident. Nos. 80E to 44E on the auxiliary switch blocks apply to the complete contactors. These auxiliary switch blocks cannot be combined with contactor relays with Ident. Nos. 31E and 22E; they are coded.

All contactor relays with 4 contacts with Ident. Nos. 40E to 22E can be extended with auxiliary switch blocks 40 to 02 to obtain contactor relays with 6 or 8 contacts in accordance with EN 50005. The Ident. Nos. on the auxiliary switch blocks apply only to the attached auxiliary switch blocks.

In addition, fully mounted 3RH12 8-pole contactor relays are available; the mounted 4-pole auxiliary switch block in the 2nd tier is not removable. The terminal designations are in accordance with EN 50011 or IEC 60947-5-1.

These versions are built according to special Swiss regulations SUVA and are distinguished externally by a red labeling plate.

Of the auxiliary contacts (integrated plus mountable) possible on the device, no more than 4 NC contacts are permitted.

### Order No. scheme

Digit of the Order No.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>SIRIUS contactor relays</b>	<b>3 R H</b>															
<b>1. generation</b>	<b>1</b>															
<b>Device type (e. g. 1 = 4-pole contactor relay, 2 = 8-pole contactor relay)</b>	<input type="checkbox"/>															
<b>Number of NO contacts (e. g. 2 = 2 NO)</b>	<input type="checkbox"/>															
<b>Number of NC contacts (e. g. 2 = 2 NC)</b>	<input type="checkbox"/>															
<b>Connection type (1 = screw, 2 = spring)</b>	<input type="checkbox"/>															
<b>Operating range / solenoid coil circuit (e. g. A = AC standard / without)</b>	<input type="checkbox"/>															
<b>Rated control supply voltage (e. g. P0 = 230 V, 50 Hz)</b>	<input type="checkbox"/>															
<b>No significance (0)</b>	<input type="checkbox"/>															
<b>Special version</b>	<input type="checkbox"/>															
<b>Example</b>	<b>3</b>	<b>R</b>	<b>H</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>-</b>	<b>1</b>	<b>A</b>	<b>P</b>	<b>0</b>	<b>0</b>			

### Note:

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

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

### Selection and ordering data

#### AC operation

PU (UNIT, SET, M) = 1  
 PS\* = 1 unit  
 PG = 41A

#### Size S00



3RH11 ...-1B.40



3RH11 ...-2B.40



3RH12 ...-1B.40



3RH12 ...-2B.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 <sup>1)</sup>	DT	Screw terminals	DT	Spring-type terminals	
					Order No.	Price € per PU	Order No.	Price € per PU

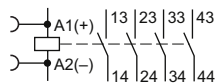
A

NO NC V AC

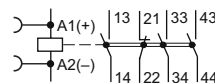
#### For screw and snap-on mounting onto TH 35 standard mounting rail

Terminal designations according to EN 50011

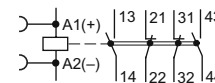
4 NO, Ident. No. **40E**



3 NO + 1 NC, Ident. No. **31E**



2 NO + 2 NC, Ident. No. **22E**



6	<b>40E</b>	4	--	24 110 230	▶ <b>3RH11 40-1AB00</b> ▶ <b>3RH11 40-1AF00</b> ▶ <b>3RH11 40-1AP00</b>	▶ <b>3RH11 40-2AB00</b> ▶ <b>3RH11 40-2AF00</b> ▶ <b>3RH11 40-2AP00</b>
	<b>31E</b>	3	1	24 110 230	▶ <b>3RH11 31-1AB00</b> ▶ <b>3RH11 31-1AF00</b> ▶ <b>3RH11 31-1AP00</b>	▶ <b>3RH11 31-2AB00</b> ▶ <b>3RH11 31-2AF00</b> ▶ <b>3RH11 31-2AP00</b>
	<b>22E</b>	2	2	24 110 230	▶ <b>3RH11 22-1AB00</b> ▶ <b>3RH11 22-1AF00</b> ▶ <b>3RH11 22-1AP00</b>	▶ <b>3RH11 22-2AB00</b> ▶ <b>3RH11 22-2AF00</b> ▶ <b>3RH11 22-2AP00</b>

#### • With permanently mounted auxiliary switch block for safety applications according to SUVA

4 NO + 4 NC, Ident. No. **44E**



6 NO + 2 NC, Ident. No. **62E**



6	<b>44E</b>	4	4	230	▶ <b>3RH12 44-1AP00</b>	B	<b>3RH12 44-2AP00</b>
	<b>62E</b>	6	2	230	▶ <b>3RH12 62-1AP00</b>	B	<b>3RH12 62-2AP00</b>

<sup>1)</sup> 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 according to page 5/7 on request.

Accessories see pages 5/7 to 5/9 and  
 "Accessories for 3RT1 Contactors", Chapter 3.

# Contactor Relays

## SIRIUS 3RH1 contactor relays, 4- and 8-pole

### DC operation · DC solenoid system

PU (UNIT, SET, M) = 1  
 PS\* = 1 unit  
 PG = 41A

#### Size S00



3RH11 ...-1B.40



3RH11 ...-2B.40



3RH12 ...-1B.40



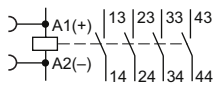
3RH12 ...-2B.40

Rated operational current $I_e$ /AC-15/AC-14 at 230 V	Contacts		Rated control supply voltage $U_s$	DT	Screw terminals		DT	Spring-type terminals	
	Ident. No.	Version			Order No.	Price € per PU		Order No.	Price € per PU
		 NO NC	V DC						

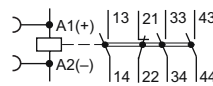
#### For screw and snap-on mounting onto TH 35 standard mounting rail

Terminal designations according to EN 50011

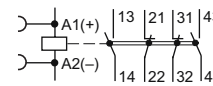
#### 4 NO, Ident. No. 40E



#### 3 NO + 1 NC, Ident. No. 31E



#### 2 NO + 2 NC, Ident. No. 22E



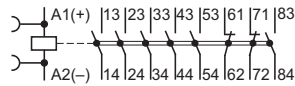
6	40E	4	--	24	▶	3RH11 40-1BB40	▶	3RH11 40-2BB40
				220	▶	3RH11 40-1BM40	▶	3RH11 40-2BM40
	31E	3	1	24	▶	3RH11 31-1BB40	▶	3RH11 31-2BB40
				220	▶	3RH11 31-1BM40	▶	3RH11 31-2BM40
	22E	2	2	24	▶	3RH11 22-1BB40	▶	3RH11 22-2BB40
				220	▶	3RH11 22-1BM40	▶	3RH11 22-2BM40

#### • With permanently mounted auxiliary switch block for safety applications according to SUVA

#### 4 NO + 4 NC, Ident. No. 44E



#### 6 NO + 2 NC, Ident. No. 62E



6	44E	4	4	24	▶	3RH12 44-1BB40	A	3RH12 44-2BB40
				220	▶	3RH12 44-1BM40	A	3RH12 44-2BM40
	62E	6	2	24	▶	3RH12 62-1BB40	A	3RH12 62-2BB40
				220	▶	3RH12 62-1BM40	A	3RH12 62-2BM40

Other voltages according to page 5/7 on request.

Accessories [see pages 5/7 to 5/9](#) and "Accessories for 3RT2 Contactors", Chapter 3.

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## SIRIUS 3RH1 contactor relays, 4- and 8-pole



### Options

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

Contactor type		3RH11
Rated control supply voltage $U_s$	Control supply voltage at	
<b>AC operation</b>		
<b>Solenoid coils for 50/60 Hz and 60 Hz</b>		
<b>50/60 Hz<sup>1)</sup></b>	<b>60 Hz</b>	
24 V AC	--	B0
42 V AC	--	D0
48 V AC	--	H0
110 V AC	--	F0
220 V AC	--	N2
230 V AC	--	P0
400 V AC	--	V0
<b>Solenoid coils for USA and Canada<sup>2)</sup></b>		
<b>50 Hz</b>	<b>60 Hz</b>	
110 V AC	120 V AC	K6
220 V AC	240 V AC	P6
<b>Solenoid coils for Japan<sup>3)</sup></b>		
<b>50/60 Hz</b>	<b>60 Hz</b>	
100 V AC	110 V AC	G6
200 V AC	220 V AC	N6
400 V AC	440 V AC	R6

Contactor type		3RH11
Rated control supply voltage $U_s$	Control supply voltage at	
<b>DC operation</b>		
12 V DC	A4	
24 V DC	B4	
42 V DC	D4	
48 V DC	W4	
60 V DC	E4	
110 V DC	F4	
125 V DC	G4	
220 V DC	M4	
230 V DC	P4	

- 1) Coil operating range at 50 Hz: 0.8 to 1.1 x  $U_s$   
at 60 Hz: 0.85 to 1.1 x  $U_s$ .
- 2) Coil operating range at 50 Hz: 0.85 to 1.1 x  $U_s$   
at 60 Hz: 0.8 to 1.1 x  $U_s$ .
- 3) Coil operating range at 50/60 Hz: 0.85 to 1.1 x  $U_s$   
at 60 Hz: 0.8 to 1.1 x  $U_s$ .

### Accessories

PU (UNIT, SET, M) = 1  
PS\* = 1 unit  
PG = 41B



3RH19 11-1GA22



3RH19 11-2GA22

For contactor relays	Contactor relays with AS block	Auxiliary contacts	DT	Screw terminals	DT	Spring-type terminals	
	Ident. No.	Version		⊕		⊕	
Type		NO NC		Order No.	Price € per PU	Order No.	Price € per PU

### Auxiliary switch blocks for snapping onto the front acc. to EN 50011

Size S00<sup>1)</sup>

#### For assembling contactor relays with 8 contacts

3RH11 40, 3RH14 40, Ident. No. 40E	<b>80E</b>	4	--		▶	<b>3RH19 11-1GA40</b>	▶	<b>3RH19 11-2GA40</b>
	<b>71E</b>	3	1		▶	<b>3RH19 11-1GA31</b>	▶	<b>3RH19 11-2GA31</b>
	<b>62E</b>	2	2		▶	<b>3RH19 11-1GA22</b>	▶	<b>3RH19 11-2GA22</b>
	<b>53E</b>	1	3		▶	<b>3RH19 11-1GA13</b>	▶	<b>3RH19 11-2GA13</b>
	<b>44E</b>	--	4 <sup>2)</sup>		▶	<b>3RH19 11-1GA04</b>	▶	<b>3RH19 11-2GA04</b>

Auxiliary switch blocks and solid-state compatible auxiliary switch blocks according to EN 50005 see "Accessories for 3RT1 Contactors", Chapter 3.



# Contactors Relays

## SIRIUS 3RH1 contactor relays, 4- and 8-pole

For contactors	Version	Rated control supply voltage $U_s^{1)}$		Power consumption of LED at $U_s$	DT	Order No. <sup>2)</sup>	Price € per PU	PU (UNIT, SET, M)	PS*	PG
		AC operation	DC operation							
Type		V AC	V DC	mW						

### Surge suppressors with LED

#### Size S00 (also for spring-type terminals)

For plugging onto the front side of the contactors with and without auxiliary switch blocks



3RT19 16-1L.00

3RT1, 3RH1	Varistor	24 ... 48	12 ... 24	10 ... 120	▶	<b>3RT19 16-1JJ00</b>	1	1 unit	41B
		48 ... 127	24 ... 70	20 ... 470	▶	<b>3RT19 16-1JK00</b>	1	1 unit	41B
		127 ... 240	70 ... 150	50 ... 700	▶	<b>3RT19 16-1JL00</b>	1	1 unit	41B
		--	150 ... 250	160 ... 950	A	<b>3RT19 16-1JP00</b>	1	1 unit	41B
3RT1, 3RH1	Noise suppression diodes	--	24 ... 70	20 ... 470	▶	<b>3RT19 16-1LM00</b>	1	1 unit	41B
		--	50 ... 150	50 ... 700	▶	<b>3RT19 16-1LN00</b>	1	1 unit	41B
		--	150 ... 250	160 ... 950	▶	<b>3RT19 16-1LP00</b>	1	1 unit	41B

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

2) For packs of 10 or 5 units "-Z" and order code "X90" must be added to the Order No.

For contactors	Version	Rated control supply voltage $U_s^{1)}$		DT	Order No. <sup>2)</sup>	Price € per PU	PU (UNIT, SET, M)	PS*	PG
		AC operation	DC operation						
Type		V AC	V DC						

### Surge suppressors without LED

#### Size S00 (also for spring-type terminals)

For plugging onto the front side of the contactors with and without auxiliary switch blocks



3RT19 16-1DG00

3RT1., 3RH1	Varistor	24 ... 48	24 ... 70	▶	<b>3RT19 16-1BB00</b>	1	1 unit	41B
		48 ... 127	70 ... 150	▶	<b>3RT19 16-1BC00</b>	1	1 unit	41B
		127 ... 240	150 ... 250	A	<b>3RT19 16-1BD00</b>	1	1 unit	41B
		240 ... 400	--	▶	<b>3RT19 16-1BE00</b>	1	1 unit	41B
		400 ... 600	--	A	<b>3RT19 16-1BF00</b>	1	1 unit	41B
3RT1., 3RH1	RC elements	24 ... 48	24 ... 70	▶	<b>3RT19 16-1CB00</b>	1	1 unit	41B
		48 ... 127	70 ... 150	▶	<b>3RT19 16-1CC00</b>	1	1 unit	41B
		127 ... 240	150 ... 250	▶	<b>3RT19 16-1CD00</b>	1	1 unit	41B
		240 ... 400	--	▶	<b>3RT19 16-1CE00</b>	1	1 unit	41B
		400 ... 600	--	▶	<b>3RT19 16-1CF00</b>	1	1 unit	41B
3RT1., 3RH1	Noise suppression diodes	--	12 ... 250	▶	<b>3RT19 16-1DG00</b>	1	1 unit	41B
3RT1., 3RH1	Diode assemblies (diode and Zener diode) for DC operation	--	12 ... 250	▶	<b>3RT19 16-1EH00</b>	1	1 unit	41B

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

2) For packs of 10 or 5 units "-Z" and order code "X90" must be added to the Order No.

For contactors	Version	DT	Order No. <sup>1)</sup>	Price € per PU	PU (UNIT, SET, M)	PS*	PG
Type							

### Additional load modules

#### Size S00 (also for spring-type terminals)

For plugging onto the front side of the contactors with and without auxiliary switch blocks




3RT19 16-1GA00

3RT1., 1, 3RH1.	For increasing the permissible residual current and for limiting the residual voltage. Ensures safe opening of contactors with direct control via 230 V AC semiconductor outputs of SIMATIC controllers. Also performs the function of an overvoltage damping circuit. Rated voltage: AC 50/60 Hz, 180 V to 255 V. Operating range: 0.8 to 1.1 x $U_s$	▶	<b>3RT19 16-1GA00</b>	1	1 unit	41B
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1) For packs of 10 units, the Order No. must be supplemented with "-Z" and the order code "X90".

## SIRIUS 3RH1 contactor relays, 4- and 8-pole

For contactors	Rated control supply voltage $U_s$	Time setting range $t$	DT	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
Type	V	s		Order No.	Price € per PU		

### OFF-delay devices

#### Size S00

#### For contactor relays with DC operation

#### Non-adjustable delay time

3RH1...-1BF40	110 AC/DC	S00: 130 non-adjustable	D	<b>3RT19 16-2BK01</b>		1	1 unit	41H
3RH1...-1BM40	220/230 AC/DC	S00: 600 non-adjustable	D	<b>3RT19 16-2BL01</b>		1	1 unit	41H
3RH1...-1BB40	24 DC	S00: 250 non-adjustable	▶	<b>3RT19 16-2BE01</b>		1	1 unit	41H



3RT19 16-2B.01

For contactors	Version	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG
Type							

### Control kit

#### Size S00

3RH1.	For manual operation of the contactor contacts for start-up and service	A	<b>3RK1 903-OCA00</b>		1	1 unit	42D
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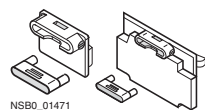


3RK1 903-OCA00

### Sealable covers

#### Size S00


3RH1 <sup>1)</sup>	Sealable covers for preventing manual operation	C	<b>3RT19 16-4MA10</b>		1	5 units	41B
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NSB0\_01471

3RT19 16-4MA10

<sup>1)</sup> Not for contactor relays with auxiliary switch block mounted onto the front.

Version	DT	Spring-type terminals 	PU (UNIT, SET, M)	PS*	PG
		Order No.	Price € per PU		

### Insulation stop for securely holding back the conductor insulation on conductors up to 1 mm<sup>2</sup>



3RT19 16-4JA02

**Insulation stop strip** can be inserted in cable entry of the spring-type terminal (2 strips per contactor required)

- For auxiliary and control current on basic devices and for mountable 3RH19 auxiliary switches, removable in pairs

B	<b>3RT19 16-4JA02</b>		1	20 units	41B
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### Tools for opening spring-type terminals

#### Screwdrivers

for all SIRIUS devices with spring-type terminals

Length: approx. 200 mm,  
3.0 mm x 0.5 mm,  
titanium gray/black, partially insulated



3RA29 08-1A

A	<b>3RA29 08-1A</b>		1	1 unit	41B
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More accessories see "Accessories for 3RT1 Contactors", Chapter 3.

# Contactors Relays

## SIRIUS 3RH14 latched contactor relays, 4-pole

### Overview

#### Standards

IEC 60947-1, EN 60947-1,  
IEC 60947-5-1, EN 60947-5-1

The terminal designations comply with EN 50011.

#### Auxiliary switches

The number of auxiliary contacts can be extended by means of front auxiliary switch blocks (max. 4 contacts).

#### Control circuit

The contactor coil and the coil of the release solenoid are both designed for uninterrupted duty.

RC elements, varistors diodes or diode assemblies can be fitted to both coils from the front for damping opening surges in the coil.

The contactor relay can also be switched on and released manually. Minimum actuating times [see internet addresses for more information, page 8](#).

### Selection and ordering data



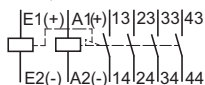
3RH14 22-1A..0

Rated operational current $I_e$ /AC-15/AC-14 at 230 V	Contacts		Rated control supply voltage $U_s$	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG
	Ident. No. acc. to EN 50011	Version						
A		NO NC	V		Order No.	Price € per PU		

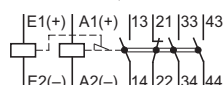
#### For screw and snap-on mounting onto TH 35 standard mounting rail

Terminal designations according to EN 50011

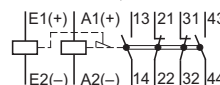
4 NO, Ident. No. **40E**



3 NO + 1 NC, Ident. No. **31E**



2 NO + 2 NC, Ident. No. **22E**



#### AC operation

6	40E	4	--	AC 50/60 Hz <sup>1)</sup>		B	3RH14 40-1AB00	1	1 unit	41A
				24	42					
				110	230	B	3RH14 40-1AD00	1	1 unit	41A
				110	230	B	3RH14 40-1AF00	1	1 unit	41A
				230	230	A	3RH14 40-1AP00	1	1 unit	41A
	31E	3	1	24	42	B	3RH14 31-1AB00	1	1 unit	41A
				110	230	B	3RH14 31-1AD00	1	1 unit	41A
				110	230	B	3RH14 31-1AF00	1	1 unit	41A
				230	230	B	3RH14 31-1AP00	1	1 unit	41A
	22E	2	2	24	42	B	3RH14 22-1AB00	1	1 unit	41A
				110	230	B	3RH14 22-1AD00	1	1 unit	41A
				110	230	B	3RH14 22-1AF00	1	1 unit	41A
				230	230	▶	3RH14 22-1AP00	1	1 unit	41A

#### DC operation - DC solenoid system

6	40E	4	--	DC		▶	3RH14 40-1BB40	1	1 unit	41A
				24	110					
				220	220	B	3RH14 40-1BF40	1	1 unit	41A
				220	220	B	3RH14 40-1BM40	1	1 unit	41A
	31E	3	1	24	110	B	3RH14 31-1BB40	1	1 unit	41A
				220	220	B	3RH14 31-1BF40	1	1 unit	41A
				220	220	B	3RH14 31-1BM40	1	1 unit	41A
	22E	2	2	24	110	▶	3RH14 22-1BB40	1	1 unit	41A
				220	220	▶	3RH14 22-1BF40	1	1 unit	41A
				220	220	B	3RH14 22-1BM40	1	1 unit	41A

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

Accessories [see pages 5/7 and 5/8](#).

# Contactor Relays

## Coupling relays

**SIRIUS 3RH11 coupling relays  
for switching auxiliary circuits, 4-pole**

### Overview

#### DC operation

IEC 60947-1, EN 60947-1,  
IEC 60947-5-1, EN 60947-5-1

The 3RH11 coupling relays for switching auxiliary circuits are tailored to the special requirements of working with electronic controls.

The 3RH11 coupling relays cannot be extended with auxiliary switch blocks.

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

Depending on the version, the solenoid coils are supplied either without overvoltage damping (3RH11 ...-HB40 or 3RH11 ...-MB40-0KT0 versions) or with a diode or varistor connected as standard.

### Selection and ordering data

#### DC operation

#### Low power consumption

#### Extended operating range of the solenoid coil

#### Solenoid coil with surge suppression



PU (UNIT, SET, M) = 1  
PS\* = 1 unit  
PG = 41A



3RH11 ...-1.B40



3RH11 ...-2.B40

Rated operational current $I_e/AC-15/AC-14$ at 230 V	Auxiliary contacts Ident. No. acc. to EN 50011	Version	DT	Screw terminals	DT	Spring-type terminals
				Order No.	Price € per PU	Order No. Price € per PU
		 NO  NC				

A

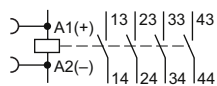
For screw and snap-on mounting onto  
TH 35 standard mounting rail

#### Size S00

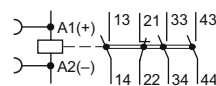
#### Diode, varistor or RC element, attachable

Terminal designations according to EN 50011 (no auxiliary switch blocks can be mounted)

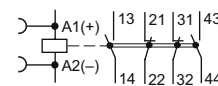
4 NO, Ident. No. **40E**



3 NO + 1 NC, Ident. No. **31E**



2 NO + 2 NC, Ident. No. **22E**



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

Power consumption of the coils **2.3 W** at 24 V

6	40E	4	--	▶	3RH11 40-1HB40	B	3RH11 40-2HB40
	31E	3	1	▶	3RH11 31-1HB40	B	3RH11 31-2HB40
	22E	2	2	▶	3RH11 22-1HB40	B	3RH11 22-2HB40

Rated control supply voltage  $U_s = 24$  V DC, coil operating range **0.85 to 1.85 x  $U_s$**

Power consumption of the coils **1.4 W** at 24 V

6	40E	4	--	B	3RH11 40-1MB40-0KT0	B	3RH11 40-2MB40-0KT0
	31E	3	1	B	3RH11 31-1MB40-0KT0	B	3RH11 31-2MB40-0KT0
	22E	2	2	A	3RH11 22-1MB40-0KT0	B	3RH11 22-2MB40-0KT0

Surge suppressors [see page 5/8](#).

# Contactor Relays

## Coupling relays

### SIRIUS 3RH11 coupling relays for switching auxiliary circuits, 4-pole



PU (UNIT, SET, M) = 1  
PS\* = 1 unit  
PG = 41A



3RH11 ...-1.B40



3RH11 ...-2.B40

Rated operational current $I_e/AC-15/AC-14$ at <b>230 V</b>	Auxiliary contacts Ident. No. acc. to EN 50011	Version	DT	Screw terminals	DT	Spring-type terminals	
				Order No.	Price € per PU	Order No.	Price € per PU
		 NO  NC					

A

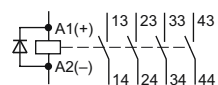
For screw and snap-on mounting onto  
TH 35 standard mounting rail

#### Size S00

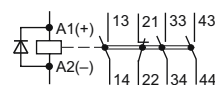
#### With integrated coil circuit (diode)

Terminal designations according to EN 50011 (no auxiliary switch blocks can be mounted)

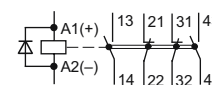
4 NO, Ident. No. **40E**



3 NO + 1 NC, Ident. No. **31E**



2 NO + 2 NC, Ident. No. **22E**



Rated control supply voltage  $U_s = 24$  V DC, coil operating range **0.7 to 1.25 x  $U_s$**   
Power consumption of the coils **2.3 W** at 24 V

6	<b>40E</b>	4	--	▶	<b>3RH11 40-1JB40</b>	B	<b>3RH11 40-2JB40</b>
	<b>31E</b>	3	1	▶	<b>3RH11 31-1JB40</b>	▶	<b>3RH11 31-2JB40</b>
	<b>22E</b>	2	2	▶	<b>3RH11 22-1JB40</b>	B	<b>3RH11 22-2JB40</b>

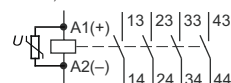
Rated control supply voltage  $U_s = 24$  V DC, coil operating range **0.85 to 1.85 x  $U_s$**   
Power consumption of the coils **1.4 W** at 24 V

6	<b>40E</b>	4	--	B	<b>3RH11 40-1VB40</b>	B	<b>3RH11 40-2VB40</b>
	<b>31E</b>	3	1	A	<b>3RH11 31-1VB40</b>	B	<b>3RH11 31-2VB40</b>
	<b>22E</b>	2	2	B	<b>3RH11 22-1VB40</b>	B	<b>3RH11 22-2VB40</b>

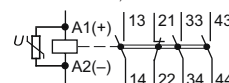
#### With integrated coil circuit (varistor)

Terminal designations according to EN 50011 (no auxiliary switch blocks can be mounted)

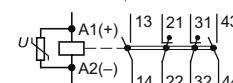
4 NO, Ident. No. **40E**



3 NO + 1 NC, Ident. No. **31E**



2 NO + 2 NC, Ident. No. **22E**



Rated control supply voltage  $U_s = 24$  V DC, coil operating range **0.7 to 1.25 x  $U_s$**   
Power consumption of the coils **2.3 W** at 24 V

6	<b>40E</b>	4	--	▶	<b>3RH11 40-1KB40</b>	B	<b>3RH11 40-2KB40</b>
	<b>31E</b>	3	1	▶	<b>3RH11 31-1KB40</b>	▶	<b>3RH11 31-2KB40</b>
	<b>22E</b>	2	2	▶	<b>3RH11 22-1KB40</b>	B	<b>3RH11 22-2KB40</b>

Rated control supply voltage  $U_s = 24$  V DC, coil operating range **0.85 to 1.85 x  $U_s$**   
Power consumption of the coils **1.4 W** at 24 V

6	<b>40E</b>	4	--	B	<b>3RH11 40-1WB40</b>	B	<b>3RH11 40-2WB40</b>
	<b>31E</b>	3	1	A	<b>3RH11 31-1WB40</b>	B	<b>3RH11 31-2WB40</b>
	<b>22E</b>	2	2	A	<b>3RH11 22-1WB40</b>	B	<b>3RH11 22-2WB40</b>

## Contactors with extended operating range $0.7 \dots 1.25 \times U_s$ for railway applications

### SIRIUS 3RH11 contactor relays

#### Overview

##### DC operation

IEC 60947-4-1, EN 60947-4-1, for requirements acc. to IEC 60077-1 and IEC 60077-2

The contactor relays are finger-safe according to EN 50274. The size S00 contactor relays have spring-type connections for all terminals.

##### Ambient temperature

The permissible ambient temperature for operation of the contactor relays (across the full coil operating range) is  $-40$  to  $+70$  °C.

Uninterrupted duty at temperatures  $> +60$  °C reduces the mechanical endurance, the load rating capacity of the conducting paths and the switching frequency.

##### Control and auxiliary circuits

The solenoid coils of the contactor relays have an extended coil operating range from  $0.7$  to  $1.25 \times U_s$  and are fitted as standard with surge suppressors. The opening delay is therefore 2 to 5 ms longer than for standard contactors.

#### Application

For operation in installations which are subject both to considerable variations in the control voltage and to high ambient temperatures, e. g. railway applications under extreme climatic conditions, rolling mills, etc.

Also for control supply voltages with battery buffering to extend the operating time in the event of battery charge failure.

##### Contactor relays with conventional coil

###### Control and auxiliary circuits

These auxiliary contactor relays have an extended operating range from  $0.7$  to  $1.25 \times U_s$ ; the coils are fitted with varistors as standard. An additional series resistor is not required.

###### Note:

An additional auxiliary switch block cannot be mounted.

###### Mounting

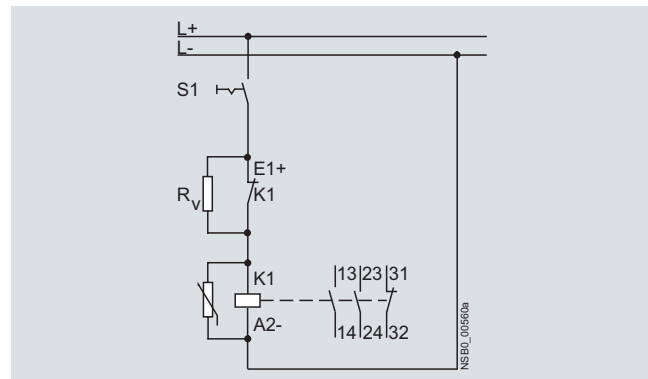
A clearance of 10 mm is required for side-by-side mounting at ambient temperatures  $> 60$  °C  $\leq 70$  °C.

##### Contactor relays with series resistor

###### Control and auxiliary circuits

The DC solenoid systems of the contactor relays are modified (to holding excitation) by means of a series resistor.

The contactor relays are supplied prewired with a plug-on module containing the series resistor. A surge suppressor (varistor) is integrated.



Circuit diagram

A 4-pole auxiliary switch block (according to EN 50005) can be fitted additionally.

###### Side-by-side mounting

Side-by-side-side mounting is permissible at ambient temperatures up to  $70$  °C.

# Contactors Relays

Contactors with extended operating range  $0.7 \dots 1.25 \times U_s$  for railway applications

## SIRIUS 3RH11 contactor relays

### Selection and ordering data

**DC operation · DC solenoid system**

**Spring-type terminals**

**For screw and snap-on mounting onto standard mounting rails**

**Solenoid coil with integrated surge suppression**



3RH11 22-2K.40



3RH11 22-2K.40-0LA0

Rated operational current				Contacts		Rated control supply voltage $U_s$	DT	Spring-type terminals	PU (UNIT, SET, M)	PS*	PG
$I_e$ /AC-15/AC-14 $T_U$ : 70 °C at				Version							
230 V	400 V	500 V	690 V	NO	NC	V DC					
A	A	A	A				Order No.	Price € per PU			

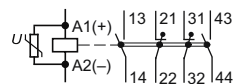
For screw and snap-on mounting onto TH 35 standard mounting rail

#### Size S00

**With conventional coil, fitted with varistor**

Terminal designations acc. to EN 50011

2 NO + 2 NC, Ident. No. **22E**

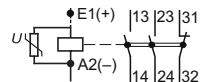


6	3	2	1	2	2 <sup>1)</sup>	24	▶	3RH11 22-2KB40 3RH11 22-2KF40	1	1 unit	41A
						110					

**With series resistor, fitted with varistor**

Terminal designations acc. to EN 50011

2 NO + 1 NC, Ident. No. **21X**



6	3	2	1	2	2 <sup>2)</sup>	24	A	3RH11 22-2KB40-0LA0 3RH11 22-2KF40-0LA0	1	1 unit	41A
						110					

<sup>1)</sup> It is not possible to mount an auxiliary switch block.

<sup>2)</sup> 4-pole auxiliary switch block acc. to EN 50005 can be mounted.