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SIRIUS

Industrial Controls

Catalog
IC 10

Edition
2018

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Industrial Controls IC 10 AO
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PDF (E86060-K1010-A191-A5-7600)



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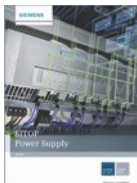


SIMOTICS GP, SD, XP, DP D 81.1
Low-Voltage Motors
Type series 1FP1, 1LE1, 1MB1 and 1PC1
Frame sizes 71 to 315
Power range 0.09 to 200 kW
E86060-K5581-A111-A9-7600



SITOP KT 10.1
Power supply
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Industrial Controls

SIRIUS



Catalog IC 10 · 2018

Supersedes:

Catalog IC 10 · 2017

Catalog Abridged IC 10 A · 03/2017 ET 200SP motor starters

Catalog Abridged IC 10 A · 04/2017 SIMOCODE pro 3UF7

Motor Management and Control Devices

Refer to the Industry Mall for current updates of this catalog:

www.siemens.com/industrymall

The products contained in this catalog can also be found in the Interactive Catalog CA 01.

Article No.: E86060-D4001-A510-D8-7600.

Please contact your local Siemens branch.

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3TG10 power relays/miniature contactorsNote:

3RH1 contactor relays can be found

- in the [Catalog Add-On IC 10 AO · 2016](#) at the [Information and Download Center](#)
- in the [Interactive Catalog CA 01](#)
- in the [Industry Mall](#)

Conversion tool

e. g. from 3RH11 to 3RH21, see www.siemens.com/sirius/conversion-tool**NEW**

Click on the Article No. in the catalog PDF to access it in the Industry Mall and get all related information.

Article No.

3RA1943-2C
3RA1943-2B
3RA1953-2B
3RA1953-2N



IC10_016413

Or directly in the Internet, e. g.
www.siemens.com/product?3RA1943-2C

Switching Devices – Contactors and Contactor Assemblies

Contactor Relays and Relays

Introduction

Overview

More information

Homepage, see www.siemens.com/sirius
 Industry Mall, see www.siemens.com/product?3RH_3TH

For the conversion tool, e.g. from 3RH11 to 3RH21, see www.siemens.com/sirius/conversion-tool

The advantages at a glance



Size
Type

S00
3RH21

S00
3RH22

3TH42

3TH43

3TH2

Article No. Page

SIRIUS 3RH2 contactor relays

4-pole • Screw or spring-type terminals

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8-pole

3RH22 5/12, 5/13

4-pole, latched

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Contactor relays for railway applications • Coils with extended voltage range

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8-pole • Screw terminals

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10-pole

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Contactor relays for railway applications • Coils with extended voltage range

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3TH2 miniature contactor relays

4-pole • Screw terminals, flat connectors and solder pin connections

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8-pole • Screw terminals

3TH22 5/28

4-pole, latched • Screw terminals

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Accessories for SIRIUS 3RH2 contactor relays

Auxiliary switch blocks • On front

3RH29, 3RA281. from 3/83, 3/96

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Surge suppressors • On front

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Additional load modules • On front

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Note:

For safety characteristics for contactors, see "Standards and approvals", page 16/6.

Switching Devices – Contactors and Contactor Assemblies

Contactor Relays and Relays

Introduction

More information

Homepage, see www.siemens.com/relaysIndustry Mall, see www.siemens.com/product?3RQ_3RS_LZFor the conversion tool, e.g. from 3TX7 to 3RQ3, see www.siemens.com/sirius/conversion-tool

The advantages at a glance



3RQ3



3RS18



LZS/LZX






Type		Article No.	Page
SIRIUS 3RQ3 coupling relays, narrow design			
Coupling relays with relay output (not plug-in)	<ul style="list-style-type: none"> Width 6.2 mm, 1 CO, versions with hard gold-plated contacts optionally available - Output coupling links - Input coupling links 	3RQ301 3RQ303	5/38 5/38
Coupling relays with plug-in relays	<ul style="list-style-type: none"> Width 6.2 mm, 1 CO, versions with hard gold-plated contacts optionally available - Output coupling links 	3RQ311	5/38
Coupling relays with semiconductor output (not plug-in)	<ul style="list-style-type: none"> Width 6.2 mm, output 1 semiconductor, triac or transistor - Output coupling links - Input coupling links 	3RQ305, 3RQ306 3RQ307	5/38 5/38
SIRIUS 3RS18 coupling relays with industrial enclosure			
Coupling relays with relay output	<ul style="list-style-type: none"> Protective separation up to 300 V between contacts and relay circuits • 1, 2 or 3 changeover contacts • Hard gold-plated contacts in combination and wide voltage range versions 	3RS18	5/41
LZS coupling relays with plug-in relays			
Coupling relays with plug-in relays with 2, 3 and 4 changeover contacts	<ul style="list-style-type: none"> Switching capacity 12 A/10 A/6 A • Width 27 mm • Base with or without logical separation 	LZS:PT, LZX:PT	5/46 ... 5/48
Coupling relays with plug-in relays with 3 changeover contacts and circular base	<ul style="list-style-type: none"> Switching capacity 10 A • 11-pole circular base • Width 38 mm 	LZS:MT, LZX:MT	5/48
Coupling relays with plug-in relays with 1 or 2 changeover contacts	<ul style="list-style-type: none"> Switching capacity 16 A/8 A • Width 15.5 mm • Base with or without logical separation 	LZS:RT, LZX:RT	5/49

Connection methods

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

Devices of the 3TH2 series are also available with screw terminals, flat connectors and solder pin connectors.

The 3RQ3 coupling relays are supplied with screw terminals and spring-type (push-in) terminals. The plug-in bases for LZS/LZX coupling relays are also available with plug-in (push-in) terminals.

-  Screw terminals
-  Spring-type terminals, spring-type terminals (push-in)
-  Flat connectors
-  Solder pin connections
-  Plug-in terminals (push-in)

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

3RQ coupling relays: Spring-type terminals (push-in) with TOP-wiring

Push-in connections are a form of spring-type terminals allowing fast wiring without tools for rigid conductors or conductors equipped with end sleeves.

As with other spring-type terminals, a screwdriver (with 3.0 x 0.5 mm blade) is required to disconnect the conductor. The same tool can also be used to wire finely-stranded or stranded conductors with no end finishing.

The advantages of the push-in terminals are found, as with all spring-type terminals, in speed of assembly and disassembly and vibration-proof connection. There is no need for the checking and tightening required with screw terminals.

With the TOP wiring method, the wire inlet and terminals can be reached from the front. This helps to speed up the wiring process and eliminate wiring errors.

SUVA-certified safety contactors

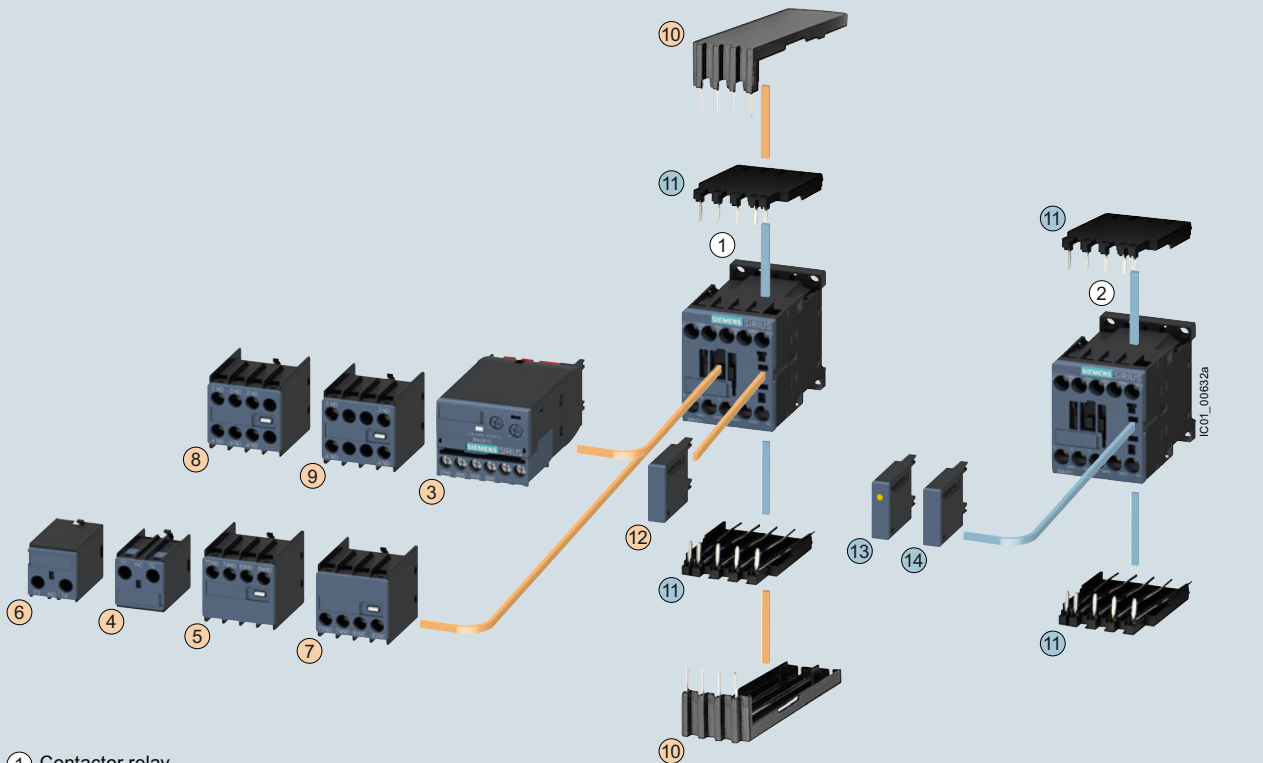
We offer special safety contactors for use in safety-related applications. They have NC contacts with mirror contact function and they have SUVA certification. This means they have permanently fitted auxiliary switch blocks and cannot be operated manually. They thus comply with all requirements for use in safety applications.

Contactor Relays

SIRIUS 3RH2 contactor relays, 4- and 8-pole

Overview

Contactor relays, size S00, with accessories



- ① Contactor relay
- ② Coupling contactor relay for auxiliary circuits

- ③ 3RA28 function module
- ④ 1-pole auxiliary switch block, cable entry from the top
- ⑤ 2-pole auxiliary switch block, cable entry from the top
- ⑥ 1-pole auxiliary switch block, cable entry from the bottom
- ⑦ 2-pole auxiliary switch block, cable entry from the bottom
- ⑧ 4-pole auxiliary switch block
(terminal designations according to EN 50011 or EN 50005)
- ⑨ 2-pole auxiliary switch block, solid-state compatible version
(terminal designations according to EN 50005)

- ⑩ Solder pin adapter for contactor relays with 4-pole auxiliary switch block
- ⑪ Solder pin adapter
- ⑫ Additional load module for increasing the permissible residual current
- ⑬ Surge suppressor with LED
- ⑭ Surge suppressor without LED

- For contactor relays
- For increasing the permissible residual current

SIRIUS 3RH2 contactor relays, 4- and 8-pole

Standards

IEC/EN 60947-1, IEC/EN 60947-4-1, IEC/EN 60947-5-1

The 3RH2 contactor relays are available with screw or spring-type terminals. The basic unit contains four contacts with terminal designations according to EN 50011.

The 3RH2 contactor relays are suitable for use in any climate. They are finger-safe according to IEC 60529.

The 3RH21 coupling contactor relays for switching auxiliary circuits are tailored to the special requirements of working with electronic controls.

Contact reliability

High contact stability at low voltages and currents, suitable for solid-state circuits with currents ≥ 1 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 3RH2 contactor relays from the front for damping opening surges in the coil. The plug-in direction is determined by a coding device.

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

Depending on the version, the solenoid coils of the coupling contactor relays are supplied without overvoltage damping (versions 3RH21...-HB40 or 3RH21...-MB40-0KT0) or with a diode or suppressor diode connected as standard.

Accessories

The accessories for the 3RT2 contactors in size S00 can also be used for the 3RH2 contactor relays (see from page 3/71 onwards).

Auxiliary switch blocks

The 3RH21 contactor relays (with the exception of coupling contactor relays) can be expanded by up to four contacts by the addition of mounted 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.

The conventional front auxiliary contacts fulfill the characteristics of positively driven operation and are therefore suitable for safety applications.

Article No. scheme

Product versions		Article number													
SIRIUS contactor relays		3RH2 □ □ □ - □ □ □ □ 0 - □ □ □ □													
Device type	e.g. 1 = 4-pole motor contactor	□													
Number of NO contacts	e.g. 2 = 2 NO		□												
Number of NC contacts	e.g. 2 = 2 NC			□											
Type of electrical connection	Screw terminals						1								
	Spring-type terminals						2								
Operating range/solenoid coil circuit	e.g. A = AC standard/without coil circuit							□							
Rated control supply voltage	e.g. P0 = 50/60 Hz 230 V AC								□	□					
Special version													□	□	□
Example															

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

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

Contactors Relays

SIRIUS 3RH2 contactor relays, 4- and 8-pole

Technical specifications

More information

For technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/16188/td>
 FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16188/faq>

Manuals, see
 • System Manual "SIRIUS Modular System – System Overview", <https://support.industry.siemens.com/cs/WW/en/view/60311318>
 • Manual "SIRIUS – SIRIUS 3RT Contactors/Contactor Assemblies", <https://support.industry.siemens.com/cs/de/en/view/60306557>

Type	Contactor relays
Size	3RH2 S00

Permissible mounting position	
The contactor relays are designed for operation on a vertical mounting surface.	

Upright mounting position	 Special version required (in the case of coupling contactor relays and contactor relays with extended operating range 3RH2122-2K..40 on request)
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Positively-driven operation of contacts in contactor relays	<p>3RH2: Yes, in the basic unit and the auxiliary switch block as well as between the basic unit and the mounted auxiliary switch block (removable) acc. to: • ZH1/457 • IEC 60947-5-1, Appendix L</p> <p>3RH22: Yes, in the basic unit and the auxiliary switch block as well as between the basic unit and the mounted auxiliary switch block (permanently mounted) acc. to: • ZH1/457 • IEC 60947-5-1, Appendix L</p> <p><u>Note:</u> 3RH2911-.NF. solid-state compatible auxiliary switch blocks have no positively-driven contacts.</p>
	<p>Explanations: There is positively-driven operation if it is ensured that the NC and NO contacts cannot be closed at the same time.</p> <p>ZH1/457 Safety Rules for Controls on Power-Operated Metalworking Presses.</p> <p>IEC 60947-5-1, Appendix L Standard for low-voltage switchgear and controlgear; special requirements for positively-driven contacts</p>

Contact reliability	Contact reliability at 17 V, 1 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	<p>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.</p> <p>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 freewheel diodes.</p> <p>The characteristic curves apply to</p> <ul style="list-style-type: none"> • 3RH21/3RH22 contactor relays¹⁾ • 3RH24 latched contactor relays • 3RH2911 auxiliary switch blocks¹⁾ • Auxiliary switch blocks for snapping onto the front, max. 4-pole and for mounting onto the side in size S00 <p>Diagram legend: I_a = Breaking current I_e = Rated operational current</p>
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¹⁾ 3RH22, 3RH2911: $I_e = 6$ A for AC-15/AC-14 and DC-13.

SIRIUS 3RH2 contactor relays, 4- and 8-pole

Type Size	Contactor relays					
	3RH21 S00	3RH22	3RH24			
General data						
Dimensions (W x H x D)						
<ul style="list-style-type: none"> Basic units <ul style="list-style-type: none"> Screw terminals Spring-type terminals Basic unit with mounted auxiliary switch block <ul style="list-style-type: none"> Screw terminals Spring-type terminals Basic unit with mounted function module or solid-state time-delay auxiliary switch block <ul style="list-style-type: none"> Screw terminals Spring-type terminals 		mm	45 x 58 x 73	--	90 x 58 x 73	
		mm	45 x 70 x 73	--		
		mm	45 x 58 x 117	--		
		mm	45 x 70 x 121	--		
		mm	45 x 58 x 147	--		
		mm	45 x 70 x 147	--		
		Mechanical endurance				
		<ul style="list-style-type: none"> Basic units 	Operating cycles	30 million		5 million
		<ul style="list-style-type: none"> Basic unit with mounted auxiliary switch block 	Operating cycles	10 million		5 million
		<ul style="list-style-type: none"> Solid-state compatible auxiliary switch block 	Operating cycles	5 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						
<ul style="list-style-type: none"> During operation 	°C	-25 ... +60				
<ul style="list-style-type: none"> During storage 	°C	-55 ... +80				
Degree of protection acc. to IEC 60529						
<ul style="list-style-type: none"> On front 		IP20 (screw terminals and spring-type terminals)				
<ul style="list-style-type: none"> Connecting terminal 		IP20 (screw terminals and spring-type terminals)				
Touch protection acc. to IEC 60529						
				Finger-safe (screw terminals and spring-type terminals)		
Shock resistance						
<ul style="list-style-type: none"> Rectangular pulse <ul style="list-style-type: none"> AC operation DC operation Sine pulse <ul style="list-style-type: none"> AC operation DC operation 	g/ms	7.3/5 and 4.7/10				
	g/ms	10/5 and 5/10				
	g/ms	11.4/5 and 7.3/10				
	g/ms	15/5 and 8/10				
Short-circuit protection						
<ul style="list-style-type: none"> Short-circuit test <ul style="list-style-type: none"> With fuse links of operational class gG: DIAZED, type 5SB; NEOZED, type 5SE with short-circuit current $I_k = 1$ kA acc. to IEC 60947-5-1 With miniature circuit breakers with C characteristic with short-circuit current $I_k = 400$ A acc. to IEC 60947-5-1 	A	10				
	A	6				

Contactors Relays

SIRIUS 3RH2 contactor relays, 4- and 8-pole

Type Size	Contactor relays		
	3RH21 S00	3RH22	3RH24
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)	
Auxiliary conductors and coil terminals²⁾ (1 or 2 conductors can be connected)		 Spring-type terminals	
• Operating tool	mm	3.0 x 0.5; 3.5 x 0.5	
• Solid or stranded	mm ²	2 x (0.5 ... 4)	
• Finely stranded with end sleeve	mm ²	2 x (0.5 ... 2.5)	
• Finely stranded without end sleeve	mm ²	2 x (0.5 ... 2.5)	
• AWG cables, solid or stranded	AWG	2 x (20 ... 12)	
Auxiliary conductors for front and laterally mounted auxiliary switches²⁾			
• Operating tool	mm	3.0 x 0.5; 3.5 x 0.5	
• Solid or stranded	mm ²	2 x (0.5 ... 2.5)	
• Finely stranded with end sleeve	mm ²	2 x (0.5 ... 1.5)	
• Finely stranded without end sleeve	mm ²	2 x (0.5 ... 2.5)	
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)	

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

²⁾ Max. external diameter of the conductor insulation: 3.6 mm.
On spring-type terminals with conductor cross-sections ≤ 1 mm² an "insulation stop" must be used, see page 3/115.

SIRIUS 3RH2 contactor relays, 4- and 8-pole




Type	Contactor relays	
Size	3RH2	S00
Control		
Solenoid coil operating range		
• AC operation	At 50 Hz At 60 Hz	0.8 ... 1.1 x U_s 0.85 ... 1.1 x U_s
• DC operation	At +50 °C At +60 °C	0.8 ... 1.1 x U_s 0.85 ... 1.1 x U_s
Solenoid coil power consumption (for cold coil and 1.0 x U_s)		
• AC operation, 50 Hz		
- Closing	VA/p.f.	37/0.8
- Closed	VA/p.f.	5.7/0.25
• AC operation, 60 Hz		
- Closing	VA/p.f.	33/0.75
- Closed	VA/p.f.	4.4/0.25
• DC operation	W	4.0
Closing = Closed		
Permissible residual current of the electronics (with 0 signal)		
• AC operation ¹⁾		< 4 mA x (230 V/ U_s)
• For DC operation		< 10 mA x (24 V/ U_s)
Operating times for 1.0 x U_s²⁾ Total break time = OFF-delay + Arcing time Values apply with coil in cold state and at operating temperature for operating range		
<u>AC operation</u>		
• Closing		
- ON-delay of NO contact	ms	9 ... 22
3RH24 minimum operating time	ms	≥ 35
- OFF-delay of NC contact	ms	6.5 ... 19
• Opening		
- OFF-delay of NO contact	ms	4.5 ... 15
3RH24 minimum operating time	ms	≥ 30
- ON-delay of NC contact	ms	5 ... 15
<u>DC operation</u>		
• Closing		
- ON-delay of NO contact	ms	35 ... 50
3RH24 minimum operating time	ms	≥ 100
- OFF-delay of NC contact	ms	30 ... 45
• Opening		
- OFF-delay of NO contact	ms	7 ... 12
3RH24 minimum operating time	ms	≥ 30
- ON-delay of NC contact	ms	13 ... 18
• Arcing time	ms	10 ... 15




¹⁾ The 3RT2916-1GA00 additional load module is recommended for higher residual currents, see page 3/114.

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

Contactors Relays

SIRIUS 3RH2 contactor relays, 4- and 8-pole

		Coupling contactor relays		
Type		3RH21...-HB40	3RH21...-JB40	3RH21...-KB40
Size		S00		
Control				
Solenoid coil operating range		0.7 ... 1.25 x U_s		
Power consumption of the solenoid coil (for cold coil and 1.0 x U_s) Closing = Closed at $U_s = 24$ V		W	2.8	
Permissible residual current Of the electronics for 0 signal		< 10 mA x (24 V/ U_s)		
Overvoltage configuration of the solenoid coil		No overvoltage damping 	Built-in diode 	Built-in suppressor diode 
Operating times at 1.0 x U_s				
• Closing delay	ON-delay NO	ms	35 ... 60	
	OFF-delay NC	ms	25 ... 40	
• Opening delay	OFF-delay NO	ms	7 ... 20	38 ... 65
	ON-delay NO	ms	10 ... 30	30 ... 90
Upright mounting position		On request		

		Coupling contactor relays		
Type		3RH21...-MB40-0KT0	3RH21...-VB40	3RH21...-SB40
Size		S00		
Control				
Solenoid coil operating range		0.85 ... 1.85 x U_s		
Power consumption of the solenoid coil (for cold coil and 1.0 x U_s) Closing = Closed at $U_s = 24$ V		W	1.6	
Permissible residual current Of the electronics for 0 signal		< 8 mA x (24 V/ U_s)		
Overvoltage configuration of the solenoid coil		No overvoltage damping 	Built-in diode 	Built-in suppressor diode 
Operating times at 1.0 x U_s				
• Closing delay	ON-delay NO	ms	25 ... 90	
	OFF-delay NC	ms	15 ... 80	
• Opening delay	ON-delay NO	ms	5 ... 20	20 ... 80
	OFF-delay NC	ms	10 ... 30	30 ... 90
Upright mounting position		On request		

SIRIUS 3RH2 contactor relays, 4- and 8-pole

		Contactor relays	
Type		3RH2	S00
Size			
Rated data of the auxiliary contacts			
Load rating with AC			
Rated operational currents I_e			
AC-12	A	10	
AC-15/AC-14, for rated operational voltage U_e	Up to 230 V A	10 ¹⁾	
	400 V A	3	
	500 V A	2	
	690 V A	1	
Load rating with DC			
Rated operational currents I_e			
DC-12, for rated operational voltage U_e			
• 1 conducting path	24 V A	10	
	60 V A	6	
	110 V A	3	
	220 V A	1	
	440 V A	0.3	
	600 V A	0.15	
• 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	
	600 V A	0.65	
• 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	
	600 V A	1.8	
DC-13, for rated operational voltage U_e			
• 1 conducting path	24 V A	10 ¹⁾	
	60 V A	2	
	110 V A	1	
	220 V A	0.3	
	440 V A	0.14	
	600 V A	0.1	
• 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	
	600 V A	0.1	
• 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	
	600 V A	0.26	
Switching frequency			
Switching frequency z in operating cycles/hour			
• Rated operation for utilization category	AC-12/DC-12	h ⁻¹	1 000
Dependence of the switching frequency z' on the operational current I' and operational voltage U' : $z' = z \cdot (I_e/I') \cdot (U_e/U')^{1.5} \cdot 1/h$	AC-15/AC-14	h ⁻¹	1 000
	DC-13	h ⁻¹	1 000
• No-load switching frequency		h ⁻¹	10 000
Ⓢ and Ⓞ rated data			
Basic units and auxiliary switch blocks			
• Rated control supply voltage	V AC	max. 600	
• Rated voltage	V AC	600	
• Switching capacity		A 600, Q 600	
• Uninterrupted current at 240 V AC	A	10	

1) 3RH22, 3RH29: $I_e = 6$ A for AC-15/AC-14 and DC-13.

Contactor Relays

SIRIUS 3RH2 contactor relays, 4- and 8-pole

Selection and ordering data

AC operation

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



3RH2122-1A..0



3RH2122-2A..0







3RH2244-1A..0



3RH2244-2A..0



3RH2422-1A..0

Rated operational current I_e /AC-15/AC-14 at 230 V	Contacts		Rated control supply voltage U_s at 50/60 Hz ¹⁾	SD	Screw terminals 		SD	Spring-type terminals 	
	Ident. No.	Version			Article No.	Price per PU		Article No.	Price per PU
A		 NO  NC	V AC	d			d		

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

Size S00

10	40E	4	--	24	▶	3RH2140-1AB00	2	3RH2140-2AB00
				110	▶	3RH2140-1AF00	5	3RH2140-2AF00
				230	▶	3RH2140-1AP00	▶	3RH2140-2AP00
31E	3	1	24	▶	3RH2131-1AB00	2	3RH2131-2AB00	
			110	▶	3RH2131-1AF00	▶	3RH2131-2AF00	
			230	▶	3RH2131-1AP00	▶	3RH2131-2AP00	
22E	2	2	24	▶	3RH2122-1AB00	2	3RH2122-2AB00	
			110	▶	3RH2122-1AF00	▶	3RH2122-2AF00	
			230	▶	3RH2122-1AP00	▶	3RH2122-2AP00	

With permanently mounted auxiliary switch block (SUVA-certified safety contactor)

6	44E	4	4	230	▶	3RH2244-1AP00	2	3RH2244-2AP00
	62E	6	2	230	▶	3RH2262-1AP00	2	3RH2262-2AP00

Latched

No lateral auxiliary switch blocks can be mounted

10	40E	4	--	24	5	3RH2440-1AB00	--
				110	5	3RH2440-1AF00	--
				230	5	3RH2440-1AP00	--
31E	3	1	24	5	3RH2431-1AB00	--	
			110	5	3RH2431-1AF00	--	
			230	5	3RH2431-1AP00	--	
22E	2	2	24	5	3RH2422-1AB00	--	
			110	5	3RH2422-1AF00	--	
			230	5	3RH2422-1AP00	--	

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 according to page 3/69 on request.

Accessories, see page 3/71 onwards.

SIRIUS 3RH2 contactor relays, 4- and 8-pole

DC operation 

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



3RH2122-1B..0



3RH2122-2B..0







3RH2244-1B..0



3RH2244-2B..0



3RH2422-1B..40

Rated operational current I_e /AC-15/AC-14 at 230 V	Contacts		Rated control supply voltage U_c	SD	Screw terminals 		SD	Spring-type terminals 	
	Ident. No.	Version			Article No.	Price per PU		Article No.	Price per PU
A		 	V DC	d			d		

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

Size S00

10	40E	4	--	24 220	▶	3RH2140-1BB40 3RH2140-1BM40	▶	3RH2140-2BB40 3RH2140-2BM40	
	31E	3	1	24 220	▶	3RH2131-1BB40 3RH2131-1BM40	▶	3RH2131-2BB40 3RH2131-2BM40	
	22E	2	2	24 220	▶	3RH2122-1BB40 3RH2122-1BM40	▶	3RH2122-2BB40 3RH2122-2BM40	
With integrated diode									
10	40E	4	--	24	▶	3RH2140-1FB40	▶	3RH2140-2FB40	
	31E	3	1	24	▶	3RH2131-1FB40	▶	3RH2131-2FB40	
	22E	2	2	24	▶	3RH2122-1FB40	▶	3RH2122-2FB40	
With permanently mounted auxiliary switch block (SUVA-certified safety contactor)									
6	44E	4	4	24	▶	3RH2244-1BB40	▶	3RH2244-2BB40	
	62E	6	2	24	▶	3RH2262-1BB40	▶	3RH2262-2BB40	
Latched									
No lateral auxiliary switch blocks can be mounted									
10	40E	4	--	24 110 220	5 5 5	3RH2440-1BB40 3RH2440-1BF40 3RH2440-1BM40	▶	-- -- --	
	31E	3	1	24 110 220	5 5 5	3RH2431-1BB40 3RH2431-1BF40 3RH2431-1BM40	▶	-- -- --	
	22E	2	2	24 110 220	2 5 5	3RH2422-1BB40 3RH2422-1BF40 3RH2422-1BM40	▶	-- -- --	

Other voltages according to page 3/69 on request.

Accessories, see page 3/71 onwards.

Contactor Relays

SIRIUS 3RH2 contactor relays, 4- and 8-pole

DC operation for direct control from the PLC

- Coupling contactor relays with adapted power consumption
- Suitable for solid-state PLC outputs
- Cannot be expanded with auxiliary switch blocks





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



3RH21...-1.B40



3RH21...-2.B40

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

A

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

Size S00

Diode, varistor or RC element, attachable

No auxiliary switch blocks can be mounted

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	--	5	3RH2140-1HB40	5	3RH2140-2HB40
	31E	3	1	5	3RH2131-1HB40	5	3RH2131-2HB40
	22E	2	2	5	3RH2122-1HB40	5	3RH2122-2HB40

Rated control supply voltage $U_s = 24$ V DC,

operating range **0.85 to 1.85 x U_s**

Power consumption of the solenoid coils **1.6 W** at 24 V

10	40E	4	--	5	3RH2140-1MB40-0KT0	5	3RH2140-2MB40-0KT0
	31E	3	1	2	3RH2131-1MB40-0KT0	5	3RH2131-2MB40-0KT0
	22E	2	2	5	3RH2122-1MB40-0KT0	5	3RH2122-2MB40-0KT0

Other voltages [according to page 3/69](#) on request.

Accessories, [see page 3/71 onwards](#).

SIRIUS 3RH2 contactor relays, 4- and 8-pole

DC operation for direct control from the PLC 

- Coupling contactor relays with adapted power consumption
- Suitable for solid-state PLC outputs
- Cannot be expanded with auxiliary switch blocks





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



3RH21...-1.B40



3RH21...-2.B40

Rated operational current I_e /AC-15/ AC-14 at 230 V	Auxiliary contacts Ident. No. acc. to EN 50011	Version	SD	Screw terminals 		Spring-type terminals 	
				Article No.	Price per PU	Article No.	Price per PU
		 	d				
A							

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

Size S00**With integrated coil circuit (diode)**

No auxiliary switch blocks can be mounted

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	--	2	3RH2140-1JB40	▶	3RH2140-2JB40
	31E	3	1	▶	3RH2131-1JB40	▶	3RH2131-2JB40
	22E	2	2	▶	3RH2122-1JB40	2	3RH2122-2JB40

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

Power consumption of the solenoid coils **1.6 W** at 24 V

10	40E	4	--	5	3RH2140-1VB40	5	3RH2140-2VB40
	31E	3	1	5	3RH2131-1VB40	5	3RH2131-2VB40
	22E	2	2	5	3RH2122-1VB40	5	3RH2122-2VB40

With integrated coil circuit (suppressor diode)

No auxiliary switch blocks can be mounted

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	--	5	3RH2140-1KB40	5	3RH2140-2KB40
	31E	3	1	▶	3RH2131-1KB40	▶	3RH2131-2KB40
	22E	2	2	▶	3RH2122-1KB40	▶	3RH2122-2KB40

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

Power consumption of the solenoid coils **1.6 W** at 24 V

10	40E	4	--	5	3RH2140-1SB40	5	3RH2140-2SB40
	31E	3	1	2	3RH2131-1SB40	5	3RH2131-2SB40
	22E	2	2	2	3RH2122-1SB40	5	3RH2122-2SB40

Other voltages [according to page 3/69](#) on request.

Accessories, [see page 3/71 onwards](#).

Contactors Relays

3TH4 Contactor Relays, 8- and 10-Pole

Overview

Standards

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

The 3TH42 and 3TH43 contactor relays are suitable for use in any climate. They are finger-safe according to IEC 60529.

Note:

The 3TH42 and 3TH43 contactor relays feature positively-driven operation in accordance with IEC 60947-5-1, Ed. 3.1.

Terminal designations according to EN 50011

In terms of their terminal designations, identification numbers and identification letters, the 3TH42 and 3TH43 contactor relays conform to the standard EN 50011 for Specific Contactor Relays.

Contact reliability

High contact stability at low voltages and currents as a result of double-break contacts, suitable for solid-state circuits with currents ≥ 1 mA at a voltage of ≥ 17 V.

Surge suppression

The 3TH42 and 3TH43 contactor relays can be equipped with RC elements, varistors, diodes or diode assemblies (combination of a diode and a Zener diode) for damping opening surges. The surge suppressors can be mounted directly on the coil (see page 5/23).

Note:

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

Mounting

Note:

With 3TH4 contactor relays with AC operation, an overvoltage of $1.1 \times U_s$, an ambient temperature ≥ 45 °C and 100% ON-period of all contactors, a minimum clearance of 5 mm between the contactors shall be observed in the case of side-by-side mounting.

Technical specifications

Contactors relays

Type

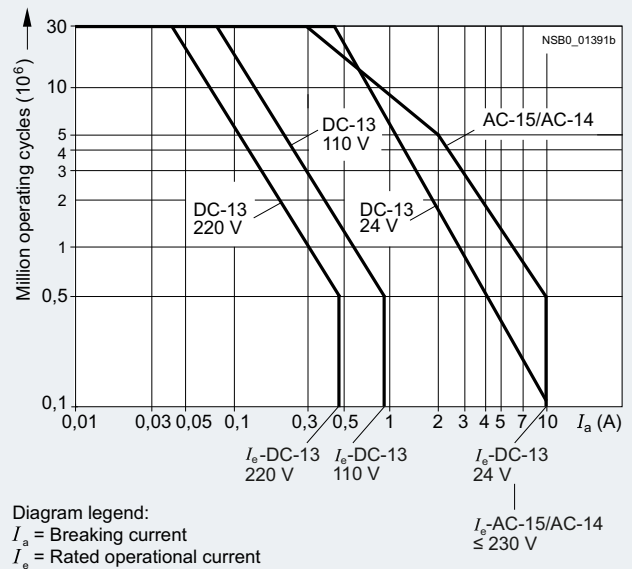
3TH42, 3TH43

Contact endurance for AC-15/AC-14 and DC-13 utilization categories

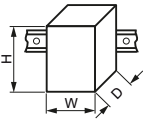
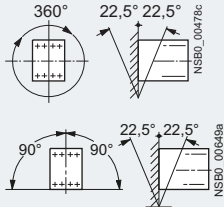


The contact endurance is mainly dependent on the breaking current. It is assumed that the operating mechanisms are switched randomly, i.e. not synchronized with the phase angle of the supply system.

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.

RC elements or freewheel diodes are suitable as protective measures for the circuits.



3TH4 Contactor Relays, 8- and 10-Pole

Contactor relays	Type	3TH42	3TH43
General data			
Dimensions (W x H x D)			
<ul style="list-style-type: none"> AC operation DC operation 		mm 45 x 78 x 97 mm 45 x 78 x 130	55 x 78 x 97 55 x 78 x 130
Permissible mounting position			
The contactor relays are designed for operation on a vertical mounting surface.			
<ul style="list-style-type: none"> AC operation DC operation 			
Upright mounting position AC and DC operation			
			
Mechanical endurance			
Basic units	Operating cycles	30 million	
Rated insulation voltage U_i (pollution degree 3)			
	V	690	
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	Up to 500	
Permissible ambient temperature			
<ul style="list-style-type: none"> During operation During storage 	°C	-25 ... +55 -55 ... +80	
Degree of protection acc. to IEC 60529			
<ul style="list-style-type: none"> On front Connecting terminal 		IP20 (with screw terminals) IP20 (with screw terminals)	
Touch protection acc. to IEC 60529			
		Finger-safe (for screw terminals)	
Shock resistance			
<ul style="list-style-type: none"> Rectangular pulse - AC operation - DC operation Sine pulse - AC operation - DC operation 	g/ms g/ms g/ms g/ms	7.7/5 and 4.4/10 9.3/5 and 5.4/10 12/5 and 6.8/10 14.7/5 and 8.5/10	
Short-circuit protection			
Short-circuit test			
<ul style="list-style-type: none"> With fuse links of operational class gG With short-circuit current $I_k = 1$ kA acc. to IEC 60947-5-1 - LV HRC, type 3NA - DIAZED, type 5SB - NEOZED Type 5SE, quick With miniature circuit breakers With short-circuit current $I_k = 400$ A acc. to IEC 60947-5-1 - C characteristic - B characteristic 	A A A A A	16 16 20 16 16	
and UL rated data			
Basic units			
Rated control supply voltage U_s			
		Max. 600 V AC, 230 V DC (acc. to UL 240 V DC)	
Rated voltage			
		600 V AC, 600 V DC	
Switching capacity			
		A 600, P 600	
Conductor cross-sections			
Auxiliary conductors and coil terminals (1 or 2 conductors can be connected)			
<ul style="list-style-type: none"> Solid or stranded Finely stranded with end sleeve Terminal screw 	mm ² mm ²	 Screw terminals 2 x (0.5 ... 1) ¹⁾ ; 2 x (1 ... 2.5) ¹⁾ ; 1 x 4 2 x (0.75 ... 2.5) M3.5	

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

Contactors Relays

3TH4 Contactor Relays, 8- and 10-Pole

Contactor relays	Type	3TH42, 3TH43
Control		
Solenoid coil operating range		
• AC operation		0.8 ... 1.1 x U_s ¹⁾
• DC operation (except 24 V)		0.8 ... 1.1 x U_s
- At 24 V DC		0.8 ... 1.2 x U_s
Solenoid coil power consumption (for cold coil and 1.0 x U_s)		
• AC operation, 50 Hz, standard version		
- Closing	VA/p.f.	68/0.82
- Closed	VA/p.f.	10/0.29
• AC operation, 50/60 Hz, standard version		
- Closing, 50 Hz	VA/p.f.	77/0.81
- Closed, 50 Hz	VA/p.f.	11/0.28
- Closing, 60 Hz	VA/p.f.	71/0.75
- Closed, 60 Hz	VA/p.f.	9/0.27
• AC operation, 50 Hz, USA/Canada		
- Closing	VA/p.f.	68/0.82
- Closed	VA/p.f.	10/0.29
• AC operation, 60 Hz, USA/Canada		
- Closing	VA/p.f.	75/0.76
- Closed	VA/p.f.	9.4/0.29 ... 0.3
• AC operation, 50 Hz, Japan		
- Closing	VA/p.f.	80/0.8
- Closed	VA/p.f.	10.7/0.29
• AC operation, 60 Hz, Japan		
- Closing	VA/p.f.	75 ... 90/0.73
- Closed	VA/p.f.	8.5 ... 10.7/0.29 ... 0.3
• DC operation up to 250 V	W	6.2
Closing = Closed		
Permissible residual current of the electronics (with 0 signal)		
• For AC operation		$\leq 8 \text{ mA} \times (220 \text{ V}/U_s)$
• For DC operation		$\leq 1.25 \text{ mA} \times (220 \text{ V}/U_s)$
Operating times at 1.0 x U_s²⁾		
<u>AC operation</u>		
• Closing		
- ON-delay NO	ms	10 ... 25
- OFF-delay NC	ms	7 ... 20
• Opening		
- OFF-delay NO	ms	5 ... 18
- ON-delay NC	ms	7 ... 20
<u>DC operation</u>		
• Closing		
- ON-delay NO	ms	30 ... 70
- OFF-delay NC	ms	28 ... 65
• Opening		
- OFF-delay NO	ms	10 ... 20
- ON-delay NC	ms	15 ... 25
Arcing time	ms	10

1) Coils for USA, Canada and Japan: 0.85 to 1.1 x U_s at 60 Hz.

2) The OFF-delay times of the NO contacts and the ON-delay times of the NC contacts increase if the contactor coils are attenuated against voltage peaks (suppression diode 6x to 9x; diode assembly 2x to 6x; varistor +2 to 5 ms).

3TH4 Contactor Relays, 8- and 10-Pole

Contactor relays	Type	3TH42, 3TH43	
Rated data of the auxiliary contacts			
Load rating with AC			
Rated operational currents I_e			
• AC-12	A	16	
• AC-15/AC-14, for rated operational voltage U_e			
	230 V A	10	
	400 V A	6	
	500 V A	4	
	690 V A	2	
Rated power of three-phase motors			
Acc. to utilization categories AC-2 and AC-3, 50 Hz			
	230/220 V kW	2.4	
	400/380 V kW	4	
	500 V kW	4	
	690/660 V kW	4	
Load rating with DC			
Rated operational currents I_e			
DC-12, for rated operational voltage U_e			
• 1 conducting path			
	Up to 48 V A	10	
	110 V A	2.1	
	220 V A	0.8	
	440 V A	0.6	
• 2 conducting paths in series			
	Up to 48 V A	10	
	110 V A	10	
	220 V A	1.6	
	440 V A	0.8	
• 3 conducting paths in series			
	Up to 48 V A	10	
	110 V A	10	
	220 V A	10	
	440 V A	1.3	
DC-13, for rated operational voltage U_e			
• 1 conducting path			
	Up to 24 V A	10	
	48 V A	5	
	110 V A	1	
	220 V A	0.45	
	440 V A	0.25	
	600 V A	0.2	
• 2 conducting paths in series			
	Up to 24 V A	10	
	48 V A	10	
	110 V A	2.5	
	220 V A	0.75	
	440 V A	0.5	
	600 V A	0.4	
• 3 conducting paths in series			
	Up to 24 V A	10	
	48 V A	10	
	110 V A	10	
	220 V A	2	
	440 V A	0.9	
	600 V A	0.8	
Switching frequency			
Switching frequency z in operating cycles/hour			
• Rated operation for utilization category	AC-12/DC-12	h^{-1}	1 000
Dependence of the switching frequency z' on the operational current I' and operational voltage U' : $z' = z \cdot (I_e/I') \cdot (U_e/U')^{1.5} \cdot 1/h$	AC-2	h^{-1}	500
	AC-3	h^{-1}	1 000
	AC-15/AC-14	h^{-1}	3 600
	DC-13	h^{-1}	3 600
• No-load switching frequency		h^{-1}	10 000

Contactors Relays

3TH4 Contactor Relays, 8- and 10-Pole

Selection and ordering data

8-pole contactor relays


AC operation  or DC operation 



3TH4280-0AP0



3TH4244-0BB4

Contacts	Rated operational current I_e /AC-15/AC-14 at	Contacts	SD	PU (UNIT, SET, M)	PS*	PG			
	230/ 220 V	400/ 380 V	500 V	690/ 660 V	Ident. No. acc. to EN 50011	Version	Screw terminals 	Article No.	Price per PU
Number	A	A	A	A	NO	NC	NO	NC	d

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

AC operation, rated control supply voltage $U_s = 50 \text{ Hz } 230/220 \text{ V AC}^{1)}$

8	10	6	4	2	80E	8	--	--	--	▶	3TH4280-0AP0	1	1 unit	41A
					71E	7	1	--	--	▶	3TH4271-0AP0	1	1 unit	41A
					62E	6	2	--	--	▶	3TH4262-0AP0	1	1 unit	41A
					53E	5	3	--	--	▶	3TH4253-0AP0	1	1 unit	41A
					44E	4	4	--	--	▶	3TH4244-0AP0	1	1 unit	41A
					44E, U	3	3	1	1	▶	3TH4293-0AP0	1	1 unit	41A

DC operation, rated control supply voltage $U_s = 24 \text{ V DC}$

8	10	6	4	2	80E	8	--	--	--	▶	3TH4280-0BB4	1	1 unit	41A
					71E	7	1	--	--	▶	3TH4271-0BB4	1	1 unit	41A
					62E	6	2	--	--	▶	3TH4262-0BB4	1	1 unit	41A
					53E	5	3	--	--	▶	3TH4253-0BB4	1	1 unit	41A
					44E	4	4	--	--	▶	3TH4244-0BB4	1	1 unit	41A
					44E, U	3	3	1	1	▶	3TH4293-0BB4	1	1 unit	41A

¹⁾ Operating range at 220 V: 0.85 to $1.1 \times U_s$;
lower operating range limit according to IEC 60947.

Note:

The solenoid coils of the 3TH42 contactor relays are available in various voltages as spare parts (on request).

- AC operation: 3TY7403-0A..

- DC operation: 3TY4803-0B..

The contacts cannot be replaced on 3TH42 contactor relays.

Other voltages according to page 5/22 on request.

Accessories, see page 5/23.


10-pole contactor relays

AC operation  or DC operation 

3TH4355-0A..



3TH4355-0B..

Contacts	Rated operational current $I_e/AC-15/AC-14$ at				Contacts	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
	230 V	400 V	500 V	690 V						
Number	A	A	A	A			Article No.	Price per PU		

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

AC operation, rated control supply voltage $U_s = 50 \text{ Hz } 230/220 \text{ V AC}^{1)}$

Number	A	A	A	A										
10	10	6	4	2	100E	10	--	--	--	▶	3TH4310-0AP0	1	1 unit	41A
					91E	9	1	--	--	▶	3TH4391-0AP0	1	1 unit	41A
					82E	8	2	--	--	▶	3TH4382-0AP0	1	1 unit	41A
					73E	7	3	--	--	▶	3TH4373-0AP0	1	1 unit	41A
					73E, U	6	2	1	1	▶	3TH4346-0AP0	1	1 unit	41A
					64E	6	4	--	--	▶	3TH4364-0AP0	1	1 unit	41A
					55E	5	5	--	--	▶	3TH4355-0AP0	1	1 unit	41A
					55E, U	4	4	1	1	▶	3TH4394-0AP0	1	1 unit	41A

DC operation, rated control supply voltage $U_s = 24 \text{ V DC}$

Number	A	A	A	A										
10	10	6	4	2	100E	10	--	--	--	▶	3TH4310-0BB4	1	1 unit	41A
					91E	9	1	--	--	▶	3TH4391-0BB4	1	1 unit	41A
					82E	8	2	--	--	▶	3TH4382-0BB4	1	1 unit	41A
					73E	7	3	--	--	▶	3TH4373-0BB4	1	1 unit	41A
					73E, U	6	2	1	1	▶	3TH4346-0BB4	1	1 unit	41A
					64E	6	4	--	--	▶	3TH4364-0BB4	1	1 unit	41A
					55E	5	5	--	--	▶	3TH4355-0BB4	1	1 unit	41A
					55E, U	4	4	1	1	▶	3TH4394-0BB4	1	1 unit	41A

¹⁾ Operating range at 220 V: 0.85 to $1.1 \times U_s$;
lower operating range limit according to IEC 60947.

Note:

The solenoid coils of the 3TH43 contactor relays are available in various voltages as spare parts (on request).

- AC operation: 3TY7403-0A..
- DC operation: 3TY4803-0B..

The contacts cannot be replaced on 3TH43 contactor relays.

Other voltages according to page 5/22 on request.

Accessories, see page 5/23.

Contactors Relays

3TH4 Contactor Relays, 8- and 10-Pole

Options

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

Delivery time on request

Rated control supply voltage U_s	Contactor type	3TH42/3TH43
Control supply voltage at		

AC operation

Solenoid coils for 50 Hz AC

50 Hz	60 Hz	
24 V AC	29 V AC	B0
36 V AC	42 V AC	G0
42 V AC	50 V AC	D0
48 V AC	58 V AC	H0
60 V AC	72 V AC	E0
110 V AC	132 V AC	F0
125/127 V AC	150/152 V AC	L0
230/220 V AC	276 V AC	P0 ¹⁾
240 V AC	288 V AC	U0
400/380 V AC	480/460 V AC	V0 ¹⁾
415 V AC	500 V AC	R0
500 V AC	600 V AC	S0

For Japan

100 V AC	100 ... 110 V AC	G6 ²⁾
200 V AC	200 ... 220 V AC	N6 ²⁾

For USA and Canada

110 V AC	120 V AC	K6 ²⁾
220 V AC	240 V AC	P6 ²⁾

Solenoid coils for 50 and 60 Hz AC

50/60 Hz	
24 V AC	C2
42 V AC	D2
110 V AC	G2
115 V AC	J2
120 V AC	K2
220 V AC	N2
230 V AC	L2
240 V AC	P2
440 V AC	R2

¹⁾ Operating range at 220 V or 380 V: 0.85 to 1.1 x U_s .

²⁾ Operating range at 60 Hz: 0.85 to 1.1 x U_s .

Rated control supply voltage U_s	Contactor type	3TH42/3TH43

DC operation

12 V DC	A4
24 V DC	B4
30 V DC	C4
36 V DC	V4
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
240 V DC	Q4

Contactor Relays

3TH4 Contactor Relays, 8- and 10-Pole

Accessories for 3TH4 contactor relays

Selection and ordering data

Version	Rated control supply voltage U_s		SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	AC	DC						
	V	V	d					

Surge suppressors¹⁾ for 3TH4 contactor relays



3TX7402-3.

Noise suppression diodes With line spacer, for mounting onto the coil terminal	--	24 ... 250	2	3TX7402-3A		1	1 unit	41B
Diode assemblies (diode and Zener diode) With line spacer, DC operation, for mounting onto the coil terminal	--	24 ... 250	2	3TX7402-3D		1	1 unit	41B
Varistors²⁾ With line spacer, for mounting onto the coil terminal	24 ... 48	24 ... 70	2	3TX7402-3G		1	1 unit	41B
	48 ... 127	70 ... 150	2	3TX7402-3H		1	1 unit	41B
	127 ... 240	150 ... 250	2	3TX7402-3J		1	1 unit	41B
	240 ... 400	--	15	3TX7402-3K		1	1 unit	41B
	400 ... 600	--	15	3TX7402-3L		1	1 unit	41B
RC elements With line spacer, for mounting onto the coil terminal	24 ... 48	24 ... 70	2	3TX7402-3R		1	1 unit	41B
	48 ... 127	70 ... 150	2	3TX7402-3S		1	1 unit	41B
	127 ... 240	150 ... 250	2	3TX7402-3T		1	1 unit	41B
	240 ... 400	--	5	3TX7402-3U		1	1 unit	41B
	400 ... 600	--	15	3TX7402-3V		1	1 unit	41B
Covers for switch position indicator	--	--	X	3TX4210-0P		1	1 unit	41B

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

²⁾ Includes the peak value of the alternating voltage on the DC side.

For contactors	Version	Rated control supply voltage U_s 50/60 Hz AC	Time setting range (minimum times)	SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
					⊕	⊖			
Type		V	s	d	Article No.	Price per PU			

ON-delay devices



3TX4180-0A

3TH42, 3TH43	NTC thermistors Time tolerance +100%, -50%	220 ... 230	0.1	5	3TX4180-0A		1	1 unit	41B
-----------------	---	-------------	-----	---	-------------------	--	---	--------	-----

Coupling links for control by PLC for 3TH4 contactor relays

3TX4090
Mounted to contactor

3TH42, 3TH43	Operating range: 17 ... 30 V DC Power consumption: 0.5 W at 24 V DC • For direct mounting on the contactor coil - Without surge suppressor - With surge suppressor								
				15	3TX4090-0C		1	1 unit	41B
				2	3TX4090-0D		1	1 unit	41B

For contactors	Rated control supply voltage U_s		OFF-delay (minimum times)	SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
	50/60 Hz AC	DC			⊕	⊖			
Type	V	V	s	d	Article No.	Price per PU			

OFF-delay devices for contactors with DC operation



3TX4701-0AN1

Bridging of voltage interruptions up to 1.2 sec									
3TH42...-0BF4 3TH43...-0BF4	110	--	0.15 or 0.3	2	3TX4701-0AN1		1	1 unit	41B
3TH42...-0BM4 3TH43...-0BM4	220	--	0.6 or 1.2	2	3TX4701-0AN1		1	1 unit	41B
3TH42...-0BP4 3TH43...-0BP4	230	--	0.6 or 1.2	2	3TX4701-0AN1		1	1 unit	41B
3TH42...-0BB4 3TH43...-0BB4	--	24	0.4 or 0.8	15	3TX4701-0BB4		1	1 unit	41B

Contactor Relays

3TH2 miniature contactor relays, 4- and 8-pole

Overview

Standards

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

The 3TH2 miniature contactor relays miniature contactors are climate-proof, and the versions with screw terminals are finger-safe according to IEC 60529.

The terminal designations comply with EN 50011.

Connections

The 3TH20 miniature contactor relays with four auxiliary contacts are available with SIGUT screw terminals, 6.3 mm x 0.8 mm flat connectors, and solder pin connections.

The miniature contactor relays with 6.3 mm x 0.8 mm flat connectors can be used in the plug-in base with solder pin connections for printed circuit boards. The miniature contactor relays are coded, and the plug-in base is codable in order to ensure non-interchangeability.

The 3TH22 miniature contactor relays with eight integrated contacts are available with screw terminals. The terminal designations comply with EN 50011.

Contact reliability

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

Latched 3TH27 miniature contactor relays

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.

Accessories

Auxiliary switch blocks

The miniature contactor relays with four contacts with screw terminals can be expanded by up to four contacts by adding mountable auxiliary switch blocks ([see page 5/30](#)).

A cover (with unit labeling plate) must be removed from the front of the miniature contactor relays for this purpose. The auxiliary switch block is then easy to mount. The auxiliary switch blocks can be removed again by unlocking them with a laterally arranged orange slide.

The miniature contactor relays with screw terminals with four contacts according to EN 50011 with the identification number 40E can be expanded with 80E, 71E, 62E, 53E or 44E auxiliary switch blocks to a total of eight miniature contactor relays according to EN 50011. The identification numbers 80E, 71E, 62E, 53E or 44E on the coded auxiliary switch blocks apply to the complete contactors. They cannot be combined with miniature contactor relays with identification number 31E and 33E.

All miniature contactor relays with screw terminals with four contacts according to EN 50011, identification number 40E, 31E or 22E, can be expanded with auxiliary switch blocks with identification number 40, 31, 22, 20, 11 or 02 to miniature contactor relays with six or eight contacts according to EN 50005. The identification numbers on the auxiliary switch blocks apply only to the attached auxiliary switch blocks.

Surge suppression

RC elements, varistors, diodes or diode assemblies (combination of a diode and a Zener diode for short break times) can be plugged onto all contactors and auxiliary switch blocks with screw terminals from the front in order to dampen opening surges in the coil ([see page 5/31](#)).

The unit labeling plate must be removed for this purpose. It can be snapped onto the attached surge suppressor.

Additional load module

The 3TX4490-1J additional load module ([see page 5/31](#)) can be used by programmable logic controllers to increase permissible residual current, and to limit residual voltage in semiconductor outputs.

This module ensures the safe shut-down of 3TH2 contactor relays and 3TF2 contactors with direct control via 230 V AC semiconductor outputs. It is accommodated in the same enclosure as the 3TX4490-3. surge suppressors and can be plugged into the contactor.

Technical specifications

Type	3TH2
Size	00

Contact endurance for AC-15/AC-14 and DC-13 utilization categories

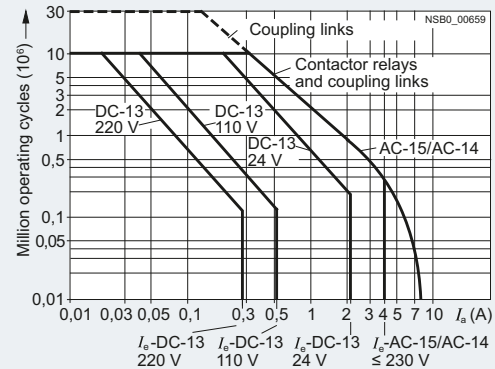
The contact endurance is mainly dependent on the breaking current. It is assumed that the operating mechanisms are switched randomly, i.e. not synchronized with the phase angle of the supply system.

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. RC elements or freewheel diodes are suitable as protective measures for the circuits.

Legend for diagram:

I_e = Rated operational current

I_a = Breaking current



Positively-driven operation of contacts in miniature contactor relays

3TH20:

Yes, in the basic unit and the auxiliary switch block as well as between the basic unit and the mounted auxiliary switch block (**removable**) acc. to:

- ZH1/457
- IEC 60947-5-1, Appendix L

3TH22:

Yes, in the basic unit and the auxiliary switch block as well as between the basic unit and the mounted auxiliary switch block (**permanently mounted**) acc. to:

- ZH1/457
- IEC 60947-5-1, Appendix L
- SUVA

Explanations:

There is positively-driven operation if it is ensured that the NC and NO contacts cannot be closed at the same time.

ZH1/457

Safety rules for control units on power-operated presses in the metal-working industry.

IEC 60947-5-1, Appendix L

Standard for Low-Voltage Switchgear and Controlgear, Control Circuit Devices and Switching Elements.

Special requirements for positively-driven contacts

SUVA

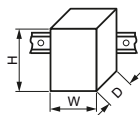
Accident prevention regulations of the "Schweizer Unfallverhütungsanstalt" (Swiss Institute for Accident Insurance)

Type	Miniature contactor relays		Auxiliary switch block
	3TH20...-....	3TH22...-....	3TX4...-..
Size	00		

General data

Dimensions (W x H x D)

- With 3TX4490 surge suppressor






mm	45 x 48 x 63	45 x 48 x 91	45 x 33 x 28
mm	45 x 48 x 88	45 x 48 x 116	--

Permissible mounting position	AC and DC operation	Any
Mechanical endurance	<ul style="list-style-type: none"> • AC operation • DC operation 	Operating cycles 10 million 30 million
Rated insulation voltage U_i (pollution degree 3)		
• Screw terminals	V	690
• Flat connector 6.3 mm x 0.8 mm	V	500
• Solder pin connections	V	500
Rated impulse withstand voltage U_{imp} (pollution degree 3)		
• Screw terminals	kV	6, control circuit 4
• Flat connector 6.3 mm x 0.8 mm	kV	6
• Solder pin connections	kV	6
Protective separation between coil and contacts (according to IEC 60947-1, Appendix N)	V	Up to 300
Permissible ambient temperature¹⁾	<ul style="list-style-type: none"> • During operation • During storage 	°C -25 ... +55 °C -55 ... +80
Degree of protection acc. to IEC 60529		
• On front		IP20 (with screw terminals)
• Connecting terminal		IP20 (with screw terminals)
Touch protection acc. to IEC 60529		Finger-safe (for screw terminals)
Shock resistance		
• Rectangular pulse	<ul style="list-style-type: none"> - AC operation - DC operation 	g/ms 7/5 and 4/10 g/ms 10/5 and 6/10
• Sine pulse	<ul style="list-style-type: none"> - AC operation - DC operation 	g/ms 9/5 and 6/10 g/ms 13/5 and 8/10

¹⁾ Applies to 50/60 Hz coil: Operating range at 60 Hz: 0.85 to 1.1 x U_s ; at 50 Hz, 1.1 x U_s , with side-by-side mounting and 100% ON period the max. ambient temperature is +40 °C.

Contactors Relays

3TH2 miniature contactor relays, 4- and 8-pole

Type	3TH2		
Size	00		
Short-circuit protection			
Short-circuit test with fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE with short-circuit current $I_k = 1 \text{ kA}$ acc. to IEC 60947-5-1	A	6	
Conductor cross-sections			
Auxiliary conductors (1 or 2 conductors can be connected)		 Screw terminals	
• Solid	mm ²	2 x (0.5 ... 2.5), 1 x 4	
• Finely stranded with end sleeve	mm ²	2 x (0.5 ... 1.5), 1 x 2.5	
• AWG cables, solid or stranded	AWG	2 x (20 ... 14), 1 x 12	
• Pin-end connector (DIN 46231)	mm ²	1 x 1 ... 2.5	
• Terminal screw		M3	
• Prescribed tightening torque for terminal screws	Nm lb.in	0.8 ... 1.3 7 ... 11	
Auxiliary conductors (1 or 2 conductors can be connected)		 Flat connectors	
• When using a plug-in sleeve 6.3–1	mm ²	0.5 ... 1	
• Solid with 6.3–2.5	mm ²	1 ... 2.5	
Control		 Solder pin connections (only for printed circuit boards)	
• Solder pin cross-section (does not apply to plug-in bases)	mm ²	0.8 x 1.2	
• Solder pin cross-section, plug-in base	mm ²	0.32 x 1.0	
Solenoid coil operating range¹⁾		0.8 ... 1.1 x U_s	
Solenoid coil power consumption (for cold coil and 1.0 x U_s)			
• AC operation, 50 Hz	Closing P.f.	VA	15 0.41
	Closed P.f.	VA	6.8 0.42
• AC operation, 60 Hz	Closing P.f.	VA	14.4 0.36
	Closed P.f.	VA	6.1 0.46
• AC operation, 50/60 Hz ¹⁾	Closing P.f.	VA	16.5/13.2 0.43/0.38
	Closed P.f.	VA	8.0/5.4 0.48/0.42
• DC operation	Closing = Closed	W	3
Permissible residual current of the electronics (with 0 signal)			
	AC operation	mA	$\leq 3 \times (220 \text{ V}/U_s)$
	DC operation	mA	$\leq 1 \times (220 \text{ V}/U_s)$
Operating times at 1.0 x U_s²⁾			
• AC operation			
- Closing	ON-delay NO	ms	6 ... 17
	OFF-delay NC	ms	5 ... 12
- Opening	OFF-delay NO	ms	3 ... 24
	ON-delay NC	ms	5 ... 20
• DC operation			
- Closing	ON-delay NO	ms	18 ... 42
	OFF-delay NC	ms	15 ... 26
- Opening	OFF-delay NO	ms	3 ... 5
	ON-delay NC	ms	4 ... 10
• Arcing time		ms	10

¹⁾ Applies to 50/60 Hz coil
Operating range at 60 Hz: 0.85 to 1.1 x U_s ;
at 50 Hz, 1.1 x U_s , with side-by-side mounting and 100% ON period the
max. ambient temperature is +40 °C.

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

3TH2 miniature contactor relays, 4- and 8-pole

Type	3TH2		
Size	00		
Rated data of the auxiliary contacts			
Load rating with AC			
Utilization category AC-12			
Rated operational current I_e (at 60 °C)	A		10
Utilization categories AC-15 and AC-14			
Rated operational current I_e at rated operational voltage U_e			
	230/220 V	A	4
	400/380 V	A	3
	500 V	A	2
	690/660 V	A	1
Rated power of three-phase motors			
According to utilization categories AC-2 and AC-3	110 V	kW	0.2
	230/220 V	kW	0.55
	400/380 V	kW	1.1
	500 V	kW	1.5
	690/660 V	kW	1.5
Load rating with DC			
Utilization category DC-12			
Rated operational current I_e at rated operational voltage U_e	A		10
• 1 conducting path ¹⁾	Up to 24 V	A	4
	60 V	A	2
	110 V	A	1.1
	240/220 V	A	0.5
• 2 conducting paths in series	Up to 24 V	A	10
	60 V	A	10
	110 V	A	4
	240/220 V	A	2
• 3 conducting paths in series	Up to 24 V	A	10
	60 V	A	10
	110 V	A	6
	240/220 V	A	2.5
Utilization category DC-13			
Rated operational current I_e at rated operational voltage U_e			
• 1 conducting path	Up to 24 V	A	2.1
	60 V	A	0.9
	110 V	A	0.52
	240/220 V	A	0.27
• 2 conducting paths in series	Up to 24 V	A	10
	60 V	A	3.5
	110 V	A	1.3
	240/220 V	A	0.9
• 3 conducting paths in series	Up to 24 V	A	10
	60 V	A	4.7
	110 V	A	3
	240/220 V	A	1.2
Switching frequency			
Switching frequency z in operating cycles/hour			
• Rated operation for utilization category	AC-12/DC-12	h ⁻¹	1 000
Dependence of the switching frequency z' on the operational current I' and operational voltage U' : $z' = z \cdot (I_e/I') \cdot (U_e/U')^{1.5} \cdot 1/h$	AC-2	h ⁻¹	500
	AC-3	h ⁻¹	1 000
	AC-15/AC-14	h ⁻¹	1 200
	DC-13	h ⁻¹	1 200
• No-load switching frequency		h ⁻¹	10 000

¹⁾ Contact endurance 0.1×10^6 operating cycles.




Contactor Relays

3TH2 miniature contactor relays, 4- and 8-pole






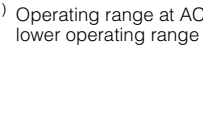
Selection and ordering data

AC operation or DC operation

- Size 00
- Screw terminals
- For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Con- tacts	Rated operational current I_e /AC-15/AC-14 at				Contacts Ident. No. acc. to EN 50011	SD Version	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
	230/ 220 V	400/ 380 V	500 V	690/ 660 V						
Num- ber	A	A	A	A		  d	Article No.	Price per PU		

Miniature contactor relays with screw terminals

AC operation, rated control supply voltage $U_s = 50$ Hz 230/220 V AC ¹⁾													
	4	4	3	2	1	40E	4	--	2	3TH2040-0AP0	1	1 unit	41A
						31E	3	1	2	3TH2031-0AP0	1	1 unit	41A
						22E	2	2	2	3TH2022-0AP0	1	1 unit	41A
						With permanently mounted auxiliary switch blocks							
	8	4	3	2	--	80E	8	0	20	3TH2280-0AP0	1	1 unit	41A
						71E	7	1	20	3TH2271-0AP0	1	1 unit	41A
						62E	6	2	2	3TH2262-0AP0	1	1 unit	41A
						53E	5	3	20	3TH2253-0AP0	1	1 unit	41A
						44E	4	4	2	3TH2244-0AP0	1	1 unit	41A
Latched													
	4	4	3	2	1	40E	4	--	10	3TH2740-0AP0	1	1 unit	41A
						31E	3	1	20	3TH2731-0AP0	1	1 unit	41A
						22E	2	2	20	3TH2722-0AP0	1	1 unit	41A
DC operation, rated control supply voltage $U_s = 24$ V DC													
	4	4	3	2	1	40E	4	--	2	3TH2040-0BB4	1	1 unit	41A
						31E	3	1	2	3TH2031-0BB4	1	1 unit	41A
						22E	2	2	2	3TH2022-0BB4	1	1 unit	41A
						With permanently mounted auxiliary switch blocks							
	8	4	3	2	--	80E	8	0	2	3TH2280-0BB4	1	1 unit	41A
						71E	7	1	2	3TH2271-0BB4	1	1 unit	41A
						62E	6	2	2	3TH2262-0BB4	1	1 unit	41A
						53E	5	3	2	3TH2253-0BB4	1	1 unit	41A
						44E	4	4	2	3TH2244-0BB4	1	1 unit	41A
Latched													
	4	4	3	2	1	40E	4	--	5	3TH2740-0BB4	1	1 unit	41A
						31E	3	1	20	3TH2731-0BB4	1	1 unit	41A
						22E	2	2	20	3TH2722-0BB4	1	1 unit	41A

¹⁾ Operating range at AC-1 and 220 V: 0.85 to 1.15 × U_s ;
lower operating range limit according to IEC 60947.



Accessories, see pages 5/30 and 5/31.

Other voltages according to page 5/29 on request.

3TH2 miniature contactor relays, 4- and 8-pole

AC operation  or **DC operation** 

- Size 00
- Flat connectors or solder pin connection
- For screw fixing and snap-on mounting onto TH 35 standard mounting rail (diagonal)

Con- tacts	Rated operational current I_e /AC-15/AC-14 at				Contacts Ident. No. acc. to EN 50011	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	230/ 220 V	400/ 380 V	500 V	690/ 660 V								
Number	A	A	A	A		  d						

Miniature contactor relays with 6.3 mm x 0.8 mm flat connectors

Flat connectors 



3TH20..-3...

AC operation, rated control supply voltage $U_s = 50$ Hz 230/220 V AC¹⁾

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

4	4	3	2	--	40E	4	--	20	3TH2040-3AP0	1	1 unit	41A
					31E	3	1	15	3TH2031-3AP0	1	1 unit	41A
					22E	2	2	20	3TH2022-3AP0	1	1 unit	41A

For screw fixing (diagonal)

4	4	3	2	--	40E	4	--	20	3TH2040-7AP0	1	1 unit	41A
					31E	3	1	20	3TH2031-7AP0	1	1 unit	41A
					22E	2	2	10	3TH2022-7AP0	1	1 unit	41A



3TH20..-7...

DC operation, rated control supply voltage $U_s = 24$ V DC

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

4	4	3	2	--	40E	4	--	20	3TH2040-3BB4	1	1 unit	41A
					31E	3	1	20	3TH2031-3BB4	1	1 unit	41A
					22E	2	2	15	3TH2022-3BB4	1	1 unit	41A

For screw fixing (diagonal)

4	4	3	2	--	40E	4	--	20	3TH2040-7BB4	1	1 unit	41A
					31E	3	1	20	3TH2031-7BB4	1	1 unit	41A
					22E	2	2	20	3TH2022-7BB4	1	1 unit	41A

Miniature contactor relays with solder pin connections for printed circuit boards

Solder pin connections 



3TH20..-6...

AC operation, rated control supply voltage $U_s = 50$ Hz 230/220 V AC¹⁾

For screw fixing (diagonal)

4	4	3	2	--	40E	4	--	20	3TH2040-6AP0	1	1 unit	41A
					31E	3	1	20	3TH2031-6AP0	1	1 unit	41A
					22E	2	2	20	3TH2022-6AP0	1	1 unit	41A

DC operation, rated control supply voltage $U_s = 24$ V DC

For screw fixing (diagonal)

4	4	3	2	--	40E	4	--	20	3TH2040-6BB4	1	1 unit	41A
					31E	3	1	20	3TH2031-6BB4	1	1 unit	41A
					22E	2	2	20	3TH2022-6BB4	1	1 unit	41A

¹⁾ Operating range at AC-1 and 220 V: 0.85 to 1.15 × U_s ;
lower operating range limit according to IEC 60947.

Accessories, see pages 5/30 and 5/31.

Options

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

Delivery time on request

Rated control supply voltage U_s	Contactor type	3TH20..-0... 3TF28	3TH20..-3..., 3TH20..-6..., 3TH20..-7..., 3TH22, 3TH27
	Size	00	

Rated control supply voltage U_s	Contactor type	3TH20..-0... 3TF28	3TH20..-3..., 3TH20..-6..., 3TH20..-7..., 3TH22, 3TH27
	Size	00	

AC operation

Solenoid coils for 50 and 60 Hz AC

50 Hz	60 Hz		
24 V AC	29 V AC	B0	--
110 V AC	132 V AC	F0	--
230/220 V AC	276 V AC	P0 ¹⁾	P0 ¹⁾

¹⁾ Operating range at AC-1 and 220 V: 0.85 to 1.15 × U_s ;
lower operating range limit according to IEC 60947.

DC operation

24 V DC	B4	B4
110 V DC	F4	--
220 V DC	M4	--



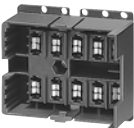
Please inquire about further voltages.

Other voltages on request.

Contactor Relays

3TH2 Miniature Contactor Relays, 4- and 8-Pole

Accessories for 3TH2 miniature contactor relays

For contactors Type	Rated control supply voltage U_s		Power consumption of LED at U_s mW	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	V AC	V DC							
Surge suppressors¹⁾ For plugging onto 3TH2 miniature contactor relays with and without auxiliary switch blocks									
Version without LED									
RC elements									
 3TX4490-3A	3TH2...-0...	24 ... 48	24 ... 70	--	5	3TX4490-3R	1	1 unit	41B
		48 ... 127	70 ... 150	--	5	3TX4490-3S	1	1 unit	41B
		127 ... 240	150 ... 250	--	5	3TX4490-3T	1	1 unit	41B
		240 ... 400	--	--	5	3TX4490-3U	1	1 unit	41B
		400 ... 600	--	--	5	3TX4490-3V	1	1 unit	41B
Varistors									
3TH2...-0...	≤ 48	24 ... 70	--	▶	5	3TX4490-3G	1	1 unit	41B
	48 ... 127	70 ... 150	--	5	3TX4490-3H	1	1 unit	41B	
	127 ... 240	150 ... 250	--	5	3TX4490-3J	1	1 unit	41B	
	240 ... 400	--	--	5	3TX4490-3K	1	10 units	41B	
	400 ... 600	--	--	5	3TX4490-3L	1	10 units	41B	
Noise suppression diode									
3TH2...-0...	--	12 ... 250	--	▶	5	3TX4490-3A	1	1 unit	41B
Diode assemblies (diode and Zener diode) For DC operation and short break times									
3TH2...-0...	--	24 ... 250	--	5	3TX4490-3B	1	1 unit	41B	
Version with LED									
Varistors									
 3TX4490-4G	3TH2...-0...	24 ... 48	12 ... 24	10 ... 120	5	3TX4490-4G	1	1 unit	41B
		48 ... 127	24 ... 70	20 ... 470	5	3TX4490-4H	1	1 unit	41B
		127 ... 240	70 ... 150	50 ... 700	5	3TX4490-4J	1	1 unit	41B
		--	150 ... 250	160 ... 950	20	3TX4490-4K	1	1 unit	41B
		--	24 ... 70	20 ... 470	5	3TX4490-4A	1	1 unit	41B
	--	70 ... 150	50 ... 700	5	3TX4490-4B	1	1 unit	41B	
	--	150 ... 250	160 ... 950	5	3TX4490-4C	1	1 unit	41B	
Noise suppression diodes									
3TH2...-0...	--	24 ... 70	20 ... 470	5	3TX4490-4A	1	1 unit	41B	
	--	70 ... 150	50 ... 700	5	3TX4490-4B	1	1 unit	41B	
	--	150 ... 250	160 ... 950	5	3TX4490-4C	1	1 unit	41B	
Additional load modules For plugging onto 3TH2 miniature contactor relays with and without auxiliary switch blocks									
To increase the permissible residual current and limit the residual voltage of SIMATIC semiconductor outputs, identical dimensions to 3TX4490-3 surge suppressors.									
3TH2...-0A...	230/220, 50 Hz	--	--	20	3TX4490-1J	1	1 unit	41B	
	230, 60 Hz	--	--						
	230, 50/60 Hz	--	--						
	Operating range 0.8 ... 1.1 x U_s								
Plug-in bases with solder pin connections for printed circuit boards, width 45 mm									
 3TX4491-2A	Rated insulation voltage U_i : 400 V (for pollution degree 3); rated impulse withstand voltage U_{imp} : 6 kV; rated operational current I_a : 6 A; Ⓢ and Ⓣ rated data: max. 300 V, 6 A								
	3TH20...-3...	for 3TH2 miniature contactor relays with flat connectors		--	20	3TX4491-2A	1	5 units	41A
	3TH20...-7...	6.3 mm ... 0.8 mm		--					
Release tools									
	For releasing miniature contactor relays from 3TX4491-2A plug-in bases				20	3TX4491-2K	1	1 unit	41A
	3TH20...-7...	--	--	--					

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

Coupling Relays

SIRIUS 3RQ3 coupling relays, narrow design

Overview



SIRIUS 3RQ3 coupling relays

SIRIUS 3RQ3 coupling relays in narrow design are used for coupling control signals from and to a controller, and they are available in different versions:

- Coupling relays with relay output (not plug-in)
- Coupling relays with plug-in relays
- Coupling relays with semiconductor output (not plug-in)

Coupling relays with relay output (not plug-in)

AC and DC operation

IEC/EN 60947-5-1

The input and output coupling relays differ with regard to the positioning of the terminals and the LEDs.

Coupling relays with plug-in relays

AC and DC operation

IEC 60947-1

The coupling relays are plug-in, so the relay can be replaced quickly at the end of its service life without detaching the wiring.

Coupling relays with semiconductor output (not plug-in)

AC and DC operation

IEC 60947-1, EN 60664-1 and EN 50005;
coupling relays with semiconductor output: EN 60747-5;
programmable controllers: IEC 61131-2

The input and output coupling relays differ with regard to the positioning of the terminals and the LEDs.

The coupling relays with semiconductor output have extremely high contact reliability, so they are especially suitable for electronic systems.

For test purposes, versions are available with manual-0-automatic switches.

SIRIUS 3RQ3 coupling relays, narrow design

Article No. scheme

Product versions		Article number				
Coupling relays with relay output (not plug-in)		3RQ30 □ 8 – □ A □ 0 □				
Design and type of output	Output coupler, without manual/automatic switch	1				
	Input coupler	3				
Type of electrical connection	Screw terminals	1				
	Spring-type terminals (push-in)	2				
Control supply voltage	24 V AC/DC		B			
	115 V AC/DC		E			
	230 V AC/DC		F			
Material of switching contacts	e.g.					
	0 = AgSnO ₂		□			
	1 = AgSnO ₂ hard gold-plated		□			
Example		3RQ30 1 8 – 1 A B 0 1				
Product versions		Article number				
Coupling relays with relay output (not plug-in)		3RQ30 1 8 – 2 A □ 0 8 – 0 A A 0				
Railway version with extended operating range 0.7 ... 1.2 x U _s						
Control supply voltage	24 V DC		M			
	110 V DC		N			
Example		3RQ30 1 8 – 2 A M 0 8 – 0 A A 0				
Product versions		Article number				
Coupling relays with plug-in relays		3RQ31 1 8 – □ A □ 0 □				
Type of electrical connection	Screw terminals	1				
	Spring-type terminals (push-in)	2				
Control supply voltage	24 V AC/DC		B			
	115 V AC/DC		E			
	230 V AC/DC		F			
	24 V DC		M			
Material of switching contacts	AgSnO ₂		0			
	AgSnO ₂ hard gold-plated		1			
Example		3RQ31 1 8 – 1 A B 0 1				
Product versions		Article number				
Coupling relays with semiconductor output (not plug-in)		3RQ30 □ □ – □ S □ □ 0				
	Current carrying capacity of the semiconductor output		Control supply voltage			
	Switching voltage of the semiconductor output					
Output coupler	• Without manual/automatic switch	1 mA ... 0.5 A	3RQ30 5 0 – □ S M 5 0	11 ... 30 V DC	10 ... 60 V DC	
		5 mA ... 2 A	3RQ30 5 2 – □ S M 3 0	11 ... 30 V DC	10 ... 30 V DC	
		1 mA ... 2 A	3RQ30 5 2 – □ S M 4 0	11 ... 30 V DC	10 ... 60 V DC	
		5 mA ... 2 A	3RQ30 5 2 – □ S M 5 0	11 ... 30 V DC	20 ... 264 V AC	
		1 mA ... 3 A	3RQ30 5 3 – □ S G 3 0	110 ... 230 V AC/DC	10 ... 30 V DC	
	• With manual/automatic switch	5 mA ... 5 A	3RQ30 5 5 – □ S M 3 0	11 ... 30 V DC	10 ... 30 V DC	
		5 mA ... 5 A	3RQ30 6 5 – □ S M 3 0	11 ... 30 V DC	10 ... 30 V DC	
		Input coupler	10 mA ... 0.5 A	3RQ30 7 0 – □ S B 3 0	11 ... 30 V AC/DC	10 ... 30 V DC
				3RQ30 7 0 – □ S G 3 0	110 ... 230 V AC/DC	10 ... 30 V DC
		Type of electrical connection	Screw terminals	1		
Spring-type terminals (push-in)	2					
Example		3RQ30 7 0 – 1 S B 3 0				

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

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

Coupling Relays

SIRIUS 3RQ3 coupling relays, narrow design

Benefits

General

- All versions with screw terminals or spring-type terminals (push-in technology)
- TOP wiring with spring-type terminals (push-in) for quick and reliable wiring
- Low space requirements in the control cabinet thanks to a consistent width of 6.2 mm
- Reduced inventory due to fewer variants
- Clearly visible functional state of the coupling relay by green LED
- Integrated reverse polarity protection and EMC arc-suppression diode
- Standardized accessories across the entire 3RQ3 series
- Universal bridging option using connecting combs for all terminals
- Galvanic isolation plate for isolating different voltages for neighboring units
- Clip-on labels available as set for individual labeling

Coupling relays with relay output (not plug-in)

- Relays fixed in enclosure for increased contact reliability
- Device variants with hard gold-plated contacts, hence high contact reliability at low currents

Coupling relays with plug-in relays

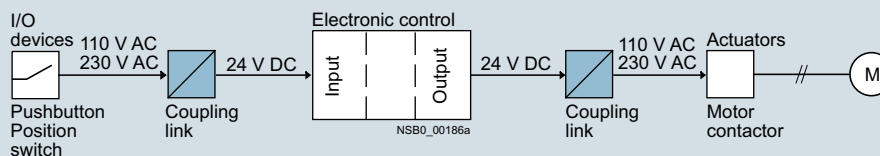
- Fast replacement of the relays with existing wiring
- Shorter installation times thanks to certified complete units
- Individual relays available as spare parts
- Device variants with hard gold-plated contacts, hence high contact reliability at low currents

Coupling relays with semiconductor output (not plug-in)

- Long service life since there is no mechanical wear
- High switching frequency thanks to short make-break times
- Vibration-resistant
- No contact bounce
- Extremely high contact reliability
- Noise-free switching
- Low control power required
- Switching of DC and capacitive loads

Application

- Electrical separation between the input and output circuit
- Adjustment of different signal levels
- Signal amplification



Application example motor controller

Technical specifications

More information

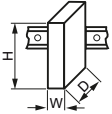
Technical specifications, see
<https://support.industry.siemens.com/cs/ww/en/ps/16198/td>
 FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16198/faq>

Operating instructions, see
<https://support.industry.siemens.com/cs/ww/en/ps/16198/man>

Coupling relays with relay output (not plug-in)

Article number	3RQ30.8- .AB00	3RQ30.8- .AB01	3RQ30.8- .AE00	3RQ30.8- .AE01	3RQ30.8- .AF00	3RQ30.8- .AF01	3RQ3018- 2AM08-0AA0	3RQ3018- 2AN08-0AA0
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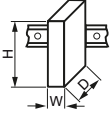
General technical specifications

Width x height x depth		mm	6.2 x 93 x 72.5					
Insulation voltage for overvoltage category III to IEC 60664 for pollution degree 3	V	300						
Max. permissible voltage for protective separation between control circuit and auxiliary circuit	V	300						
Ambient temperature								
• During operation	°C	-25 ... +60			-40 ... +70			
• During storage	°C	-40 ... +85						
Degree of protection	IP20							
Version of the fuse link required for short-circuit protection of the auxiliary switch	Fuse gG: 4 A							
Operational current of the auxiliary contacts								
• At AC-15								
- At 24 V	A	3						
- At 250 V	A	3						
• At DC-13								
- At 24 V	A	1						
- At 125 V	A	0.2						
- At 250 V	A	0.1						
Contact reliability of the auxiliary contacts (one contact failure per 100 million)		17 V, 5 mA	5 V, 1 mA	17 V, 5 mA	5 V, 1 mA	17 V, 5 mA	5 V, 1 mA	17 V, 5 mA
Mechanical endurance (operating cycles) typical	10 000 000							
Electrical endurance (operating cycles) for AC-15 at 230 V typical	100 000							
Operating range factor of the control supply voltage, rated value								
• At AC								
- At 50 Hz		0.8 ... 1.25			0.8 ... 1.1		--	
- At 60 Hz		0.8 ... 1.25			0.8 ... 1.1		--	
• At DC		0.8 ... 1.25			0.8 ... 1.1		0.7 ... 1.25	
Active power input	W	0.3		0.5		1		0.3 0.6
Thermal current	A	6						

Coupling Relays

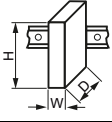


SIRIUS 3RQ3 coupling relays, narrow design

Coupling relays with plug-in relay

Article number		3RQ3118- .AB00	3RQ3118- .AB01	3RQ3118- .AE00	3RQ3118- .AE01	3RQ3118- .AF00	3RQ3118- .AF01	3RQ3118- .AM00	3RQ3118- .AM01	
General technical specifications										
Width x height x depth	mm	6.2 x 93 x 76								
										
Insulation voltage for overvoltage category III to IEC 60664 for pollution degree 3	V	300								
Max. permissible voltage for protective separation between control circuit and auxiliary circuit	V	300								
Ambient temperature										
• During operation	°C	-25 ... +60								
• During storage	°C	-40 ... +85								
Degree of protection		IP20								
Version of the fuse link required for short-circuit protection of the auxiliary switch		Fuse gG: 4 A								
Operational current of the auxiliary contacts										
• At AC-15										
- At 24 V	A	3								
- At 250 V	A	3								
• At DC-13										
- At 24 V	A	1								
- At 125 V	A	0.2								
- At 250 V	A	0.1								
Contact reliability of the auxiliary contacts (one contact failure per 100 million)		17 V, 5 mA	5 V, 1 mA	17 V, 5 mA	5 V, 1 mA	17 V, 5 mA	5 V, 1 mA	17 V, 5 mA	5 V, 1 mA	
Mechanical endurance (operating cycles) typical		10 000 000								
Electrical endurance (operating cycles) for AC-15 at 230 V typical		100 000								
Operating range factor of the control supply voltage, rated value										
• At AC										
- At 50 Hz		0.8 ... 1.25				0.8 ... 1.1				--
- At 60 Hz		0.8 ... 1.25				0.8 ... 1.1				--
• At DC		0.8 ... 1.25				0.8 ... 1.1				0.8 ... 1.25
Active power input	W	0.3		0.5		1		0.3		
Thermal current	A	6								

SIRIUS 3RQ3 coupling relays, narrow design

Coupling relays with semiconductor output (not plug-in)

Article number	3RQ3050- .SM50	3RQ3052- .SM30	3RQ3052- .SM40	3RQ3052- .SM50	3RQ3053- .SG30	3RQ3055- .SM30	3RQ3065- .SM30	3RQ3070- .SB30	3RQ3070- .SG30	
General technical specifications										
Width x height x depth	6.2 x 93 x 72.5 mm						6.2 x 93 x 75 mm		6.2 x 93 x 72.5 mm	
										
Insulation voltage for overvoltage category III to IEC 60664 for pollution degree 3	50 V			300 V		50 V		--		
Ambient temperature										
• During operation	-25 ... +60 °C									
• During storage	-40 ... +85 °C									
Degree of protection	IP20									
Switching voltage of the semiconductor output										
• At AC	--			20 ... 264 V		--			--	
• At DC	10 ... 60 V		10 ... 30 V		10 ... 60 V		--		10 ... 30 V	
Current carrying capacity of the semiconductor output										
• At AC	--			5 mA ... 2 A		--			--	
• At DC	1 mA ... 0.5 A		5 mA ... 2 A		1 mA ... 2 A		--		1 mA ... 3 A 5 mA ... 5 A 10 mA ... 0.5 A	
Operating range factor of the control supply voltage, rated value										
• At AC										
- At 50 Hz	--			1 ... 1		--		1 ... 1		
- At 60 Hz	--			1 ... 1		--		1 ... 1		
• At DC	1 ... 1									
Active power input	0.3 W			0.25 W		0.3 W		0.5 W		
Thermal current	0.5 A		2 A		3 A		5 A		0.5 A	
Article number	3RQ3...-1....				3RQ3...-2....					
Type of electrical connection for auxiliary and control circuits	 Screw terminals				 Spring-type terminals (push-in)					
Type of connectable conductor cross-sections										
• Solid	1x (0.25 ... 2.5) mm ²									
• Finely stranded										
- Without end sleeves	--				1x (0.25 ... 2.5) mm ²					
- With end sleeves	1x (0.25 ... 1.5) mm ²									
• Solid for AWG cables	1x (20 ... 14)									

Coupling Relays

SIRIUS 3RQ3 coupling relays, narrow design

Selection and ordering data

Type of voltage	Control supply voltage			Number of CO contacts for auxiliary contacts	Material of switching contacts	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	At AC		At DC								
	At 50 Hz	At 60 Hz									
	V	V	V			d					

Coupling relays with relay output (not plug-in)

Output coupling links

AC/DC	24	24	24	1	AgSnO2	2	3RQ3018-□AB00	1	5 units	41H
					AgSnO2 hard gold-plated	2	3RQ3018-□AB01	1	5 units	41H
	115	115	115	1	AgSnO2	2	3RQ3018-□AE00	1	5 units	41H
					AgSnO2	2	3RQ3018-□AF00	1	5 units	41H
DC	--	--	24	1	AgSnO2	2	3RQ3018-2AM08-0AA0	1	5 units	41H
					AgSnO2	2	3RQ3018-2AN08-0AA0	1	5 units	41H

Input coupling links

AC/DC	24	24	24	1	AgSnO2	2	3RQ3038-□AB00	1	5 units	41H
					AgSnO2 hard gold-plated	2	3RQ3038-□AB01	1	5 units	41H
	115	115	115	1	AgSnO2	2	3RQ3038-□AE00	1	5 units	41H
					AgSnO2 hard gold-plated	2	3RQ3038-□AE01	1	5 units	41H
230	230	230	1	AgSnO2	2	3RQ3038-□AF00	1	5 units	41H	
				AgSnO2 hard gold-plated	2	3RQ3038-□AF01	1	5 units	41H	

3RQ30.8-2....

Coupling relays with plug-in relay

Output coupling links

AC/DC	24	24	24	1	AgSnO2	2	3RQ3118-□AB00	1	5 units	41H
					AgSnO2 hard gold-plated	2	3RQ3118-□AB01	1	5 units	41H
	115	115	115	1	AgSnO2	2	3RQ3118-□AE00	1	5 units	41H
					AgSnO2 hard gold-plated	2	3RQ3118-□AE01	1	5 units	41H
230	230	230	1	AgSnO2	2	3RQ3118-□AF00	1	5 units	41H	
				AgSnO2 hard gold-plated	2	3RQ3118-□AF01	1	5 units	41H	
DC	--	--	24	1	AgSnO2	2	3RQ3118-□AM00	1	5 units	41H
					AgSnO2 hard gold-plated	2	3RQ3118-□AM01	1	5 units	41H

3RQ3118-2....

Type of electrical connection

- Screw terminals
- Spring-type terminals (push-in)

Type of voltage	Control supply voltage			Current carrying capacity of the semiconductor output		Operating mode selectable via switch position	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	At AC		At DC	At AC	At DC							
	At 50 Hz	At 60 Hz										
							d					

Coupling relays with semiconductor output (not plug-in)

Output coupling links

DC	--	--	11 ... 30 V	--	1 mA ... 0.5 A	--	2	3RQ3050-□SM50	1	5 units	41H	
					5 mA ... 2 A	--	2	3RQ3052-□SM30	1	5 units	41H	
					1 mA ... 2 A	--	2	3RQ3052-□SM40	1	5 units	41H	
					5 mA ... 2 A	--	2	3RQ3052-□SM50	1	5 units	41H	
					--	5 mA ... 5 A	--	2	3RQ3055-□SM30	1	5 units	41H
					Manual/Off/Automatic	--	2	3RQ3065-□SM30	1	5 units	41H	
AC/DC	110 ... 230 V	110 ... 230 V	110 ... 230 V	--	1 mA ... 3 A	--	2	3RQ3053-□SG30	1	5 units	41H	

3RQ3050-2SM50

Input coupling links

AC/DC	11 ... 30 V	11 ... 30 V	11 ... 30 V	--	10 mA ... 0.5 A	--	2	3RQ3070-□SB30	1	5 units	41H
	110 ... 230 V	110 ... 230 V	110 ... 230 V	--	10 mA ... 0.5 A	--	2	3RQ3070-□SG30	1	5 units	41H

Type of electrical connection

- Screw terminals
- Spring-type terminals (push-in)

Coupling Relays

SIRIUS 3RS18 coupling relays with industrial enclosure

Overview

3RS18 coupling relays in their proven 22.5 mm industrial enclosure serve to couple control signals from and to a controller.

The series comprises devices with up to 3 changeover contacts with screw terminals or spring-type terminals as combination voltage or wide voltage range versions.

The relay coils are protected internally with noise suppression diodes.

Versions:

- Wide voltage range: One connection for a wide voltage range
- Combination voltage: Two connections for different voltage ranges
- Versions with solid-state compatible outputs (hard gold-plating)
- 1, 2 or 3 changeover contacts

Application

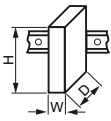


They can be used wherever solid-state-compatible contacts are required and where devices with a wide voltage range are used.

Technical specifications

More information

Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/16203/td>


Manuals, see <https://support.industry.siemens.com/cs/ww/en/ps/16203/man>

Type		3RS1800-A...	3RS1800-B...	3RS1800-H...
General data				
Dimensions (W x H x D)	 mm	22.5 x 86 x 91	22.5 x 86 x 91	22.5 x 86 x 91
Rated insulation voltage U_i (pollution degree 3)	V	500		
Protective separation acc. to IEC 60947-1, Appendix N between the coil and the contacts and between the individual contacts.	V	300		
Permissible ambient temperature				
• During operation	°C	-25 ... +60		
• During storage	°C	-40 ... +80		
Degree of protection acc. to IEC 60529				
• Enclosure		IP20		
Short-circuit protection				
Short-circuit test with fuse links of operational class gG, with short-circuit current $I_k = 1$ kA acc. to IEC 60947-5-1	A	4		
Conductor cross-sections				
For 3RS1800-1:		 Screw terminals		
• Solid	mm ²	1 x (0.5 ... 4); 2 x (0.5 ... 2.5)		
• Finely stranded with end sleeve	mm ²	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.5)		
• AWG cables, solid or stranded	mm ²	2 x (20 ... 14)		
• Terminal screw - Corresponding opening tool		M3.5 Screwdriver, size 3.0 mm x 0.5 mm (3RA2908-1A)		
• Tightening torque	Nm	0.8 ... 1.2		
For 3RS1800-2:		 Spring-type terminals		
• Solid	mm ²	2 x (0.25 ... 1.5)		
• Finely stranded without end sleeve	mm ²	2 x (0.25 ... 1.5)		
• Finely stranded with end sleeve	mm ²	2 x (0.25 ... 1)		
• AWG cables, solid or stranded	AWG	2 x (24 ... 16)		
• Corresponding opening tool		Screwdriver, size 3.0 mm x 0.5 mm (3RA2908-1A)		

SIRIUS 3RS18 coupling relays with industrial enclosure

Type			3RS1800-A...	3RS1800-B...	3RS1800-H...
Control side					
Operating range			0.85 ... 1.1 x U_s		
Power consumption, max.	AC or DC	VA/W	8 / 1		
Load side					
Conventional thermal current I_{th}			A	6	
Rated operational currents I_e					
• AC-15	At 24 ... 400 V	A	3		
• DC-13	At 24 V	A	1		
	At 110 V	A	0.2		
	At 230 V	A	0.1		
Switching current for resistive load					
• AC-12	At 24 ... 400 V	A	5		
• DC-12	At 24 V	A	5		
	At 115 V	A	0.2		
	At 230 V	A	0.2		
Switching voltage					
• Max. AC			V	400	
• Max. DC			V	250	
Min. contact load					
• Standard contacts			17 V DC, 5 mA with 1 ppm fault		
• Hard gold-plated contacts			5 V DC, 1 mA with 1 ppm fault		
Mechanical endurance			Operating cycles	10 x 10 ⁶	
Electrical endurance at I_e			Operating cycles	1 x 10 ⁵	

Selection and ordering data

Rated control supply voltage U_s (at AC: 50/60 Hz)	Connection	U_s	Contacts Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
V				d					

Coupling relays in industrial enclosure, 22.5 mm



3RS1800-1H...

Screw terminals

**Wide voltage range**

24 ... 240 AC/DC	A1 - A2	2	2	2	3RS1800-1BW00		1	1 unit	41H
		3	2	2	3RS1800-1HW00		1	1 unit	41H
		3 ¹⁾	2	2	3RS1800-1HW01		1	1 unit	41H

Combination voltage

24 AC/DC and 110 ... 120 AC	A3 - A2 or A1 - A2	1	2	2	3RS1800-1AQ00		1	1 unit	41H
		2	2	2	3RS1800-1BQ00		1	1 unit	41H
		3	2	2	3RS1800-1HQ00		1	1 unit	41H
		3 ¹⁾	5	5	3RS1800-1HQ01		1	1 unit	41H

24 AC/DC and 220 ... 240 AC	A3 - A2 or A1 - A2	1	2	2	3RS1800-1AP00		1	1 unit	41H
		2	2	2	3RS1800-1BP00		1	1 unit	41H
		3	2	2	3RS1800-1HP00		1	1 unit	41H
		3 ¹⁾	2	2	3RS1800-1HP01		1	1 unit	41H

Spring-type terminals

**Wide voltage range**

24 ... 240 AC/DC	A1 - A2	2	2	2	3RS1800-2BW00		1	1 unit	41H
		3	2	2	3RS1800-2HW00		1	1 unit	41H
		3 ¹⁾	2	2	3RS1800-2HW01		1	1 unit	41H

Combination voltage

24 AC/DC and 110 ... 120 AC	A3 - A2 or A1 - A2	1	5	5	3RS1800-2AQ00		1	1 unit	41H
		2	2	2	3RS1800-2BQ00		1	1 unit	41H
		3	5	5	3RS1800-2HQ00		1	1 unit	41H
		3 ¹⁾	5	5	3RS1800-2HQ01		1	1 unit	41H

24 AC/DC and 220 ... 240 AC	A3 - A2 or A1 - A2	1	2	2	3RS1800-2AP00		1	1 unit	41H
		2	2	2	3RS1800-2BP00		1	1 unit	41H
		3	2	2	3RS1800-2HP00		1	1 unit	41H
		3 ¹⁾	2	2	3RS1800-2HP01		1	1 unit	41H

1) Hard gold-plated contacts.

Coupling Relays

LZS coupling relays with plug-in relays

Overview

Coupling relays with plug-in relays can be ordered as complete units or as individual modules for customer assembly.

Function

The coupling relays with semiconductor output have low power consumption and are therefore particularly well suited to solid-state systems. In the versions equipped with LEDs, these indicate the switching state. The LZS:PT/MT coupling relays have a test button. This can be used to force the relays into the switching state and to lock it without electrical control. This is indicated by a raised petrol-colored lever.

Control with solid-state output

In the case of solid-state outputs (e.g. proximity switch) with overload and short-circuit protection, you must make allowance during configuration for the temporarily flowing capacitor charging currents! This is possible, for example, by using a suitable LZS coupling relay with plug-in relay.

Surge suppression

The 24 V DC relays LZX:RT and LZX:PT with LEDs can be supplied with, all others without integral surge suppression (freewheel diode connected in parallel with A1/A2). The positive control supply voltage must be connected to coil terminal A1.

Mounting

The relays are plugged into the base and this is snapped onto a TH 35 standard mounting rail according to IEC 60715.

A fixing bracket can be ordered for the MT series that additionally fixes the relay into a plug-in base (under conditions of increased mechanical stress). For the RT and PT series, a combined fixing and ejection bracket is available which can be used to disassemble the relay where access is difficult, for example, when relays are mounted side-by-side.

They can be mounted as required.

Logical separation

The terminals for the contacts and the terminals for the coil are arranged on separate levels, e.g. above for contacts and below for coil. Logical separation is not necessarily protective separation.

Protective separation

For protective separation, transfer of the voltage of one circuit to another circuit is prevented to a suitable degree of safety (requirements and tests are described in IEC 60947-1 in Appendix N).

Notes on the previous LZX series

The complete units and accessory parts of the LZX series are no longer listed in this catalog. The complete units of the LZS series are fully compatible with the corresponding units of the LZX series. Prices for the LZS series are lower than for the previous LZX series.

The LZX plug-in relays are available unchanged and are used accordingly in both the LZS and the LZX series.

Note:

Due to differences in geometry, the LED modules, plug-in bases, fixing brackets and labels can be combined and/or used only in the respective series, LZS or LZX.

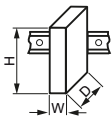


The LZS series offers not only service-proven screw connections but also versions with plug-in terminals (push-in).

Technical specifications

More information

Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/16204/td>

Manuals, see <https://support.industry.siemens.com/cs/ww/en/ps/16204/man>

Relay type		LZX:RT print relay, 8-pole, (12.7 mm) 1 CO / 2 CO				LZX:PT industrial relay, 8-, 11- and 14-pole, (22.5 mm) 2 CO / 3 CO / 4 CO				
General data										
Dimensions (W x H x D)										
• LZS:RT.A4 / LZS:PT.A5		mm	15.5 x 78 x 71				28 x 74 x 72			
• LZS:RT.B4 / LZS:PT.B5		mm	15.5 x 77 x 71				28 x 77 x 79			
• LZS:RT.D4 / LZS:PT.D5		mm	15.5 x 98 x 71				28 x 98 x 79			
Rated control supply voltage U_s¹⁾	V		24 DC	24 AC	115 AC	230 AC	24 DC	24 AC	115 AC	230 AC
Rated insulation voltage U_i	V		250							
(Pollution degree 3)										
Overvoltage category			III							
Acc. to IEC 60664-1										
Protective separation			Up to 250 V (with plug-in base LZS:RT78726)				No			
Between coil and contacts										
Acc. to IEC 60947-1, Appendix N										
Degree of protection			IP67				IP50			
• Relays										
• Bases										
Permissible ambient temperature			-40 ... +70							
• During operation										
• During storage										
	°C		-40 ... +80							
	°C		-40 ... +80							
Conductor cross-sections										
Connection type										
 Screw terminals										
• Solid	mm ²		2 x 2.5							
• Finely stranded with end sleeve	mm ²		2 x 1.5							
• Corresponding opening tool										
Screwdriver, size 3.0 ... 3.5 mm x 0.5 mm (3RA2908-1A)										
Connection type										
 Plug-in terminals (push-in)										
• Solid	mm ²		1 x (0.75 ... 1.5), 2 x (0.75 ... 1.0), 2 x 1.5							
• Finely stranded without end sleeve	mm ²		1 x (0.75 ... 1.5), 2 x (0.75 ... 1.0), 2 x 1.5							
• Finely stranded with end sleeve	mm ²		1 x (0.75 ... 1.0), 2 x 0.75, 1 x 1.5							

¹⁾ AC voltages, 50 Hz; for 60 Hz operation, the lower response value must be increased by 10%; the power loss will decrease slightly.

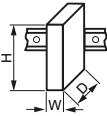
Coupling Relays

LZS coupling relays with plug-in relays

Relay type		LZX:RT print relay, 8-pole, (12.7 mm) 1 CO / 2 CO				LZX:PT industrial relay, 8-, 11- and 14-pole, (22.5 mm) 2 CO / 3 CO / 4 CO			
Control side									
Operating range at 20 °C	V	16.8 ... 52	18 ... 52	86.3 ... 127	172 ... 264	18 ... 40.8	19.2 ... 39.6	92 ... 190	184 ... 380
Power consumption at U_s									
• AC	VA	--	0.75			--	1		
• DC	W	0.4	--			0.75	--		
Release voltage	V	2.4	7.2	34.5	69	3.6	7.2	34.5	69
Protection circuit		Freewheel diode for complete unit	--			Freewheel diode in LED module	--		
Load side									
Switching voltage AC/DC	V	24 ... 250							
Rated currents¹⁾									
• Conventional thermal current I_{th}									
- 1 CO contact	A	16				--			
- 2 CO contacts	A	6				12			
- 3 CO contacts	A	--				10			
- 4 CO contacts	A	--				6			
• Rated operational current I_e /AC-15 acc. to utilization categories (IEC 60947-5-1)	A	RT3 (1 CO contact): 6 RT4 (2 CO contacts): 2.5				PT2 (2 CO contacts): 5 PT3 (3 CO contacts): 5 PT5 (4 CO contacts): 4 (DC coils), 2 (AC coils)			
• Rated operational current I_e DC-13 with suppressor diode acc. to utilization categories (IEC 60947-5-1)	A	2 at 24 V, 0.27 at 230 V				PT2, PT3: 5 at 24 V PT5: 4 at 24 V, 0.5 at 230 V			
Short-circuit protection									
Short-circuit test with fuse links of operational class gG with short-circuit current $I_k = 1$ kA acc. to IEC 60947-5-1									
• DIAZED, type 5SB	A	10				6			
Min. contact load (reliability: 1 ppm)									
		Standard 17 V, 10 mA; hard gold-plated 17 V/0.1 mA				Standard 17 V, 10 mA; hard gold-plated 20 V/1 mA			
Mechanical endurance									
	Operating cycles	30 x 10 ⁶		10 x 10 ⁶					
Electrical endurance (resistive load at 250 V AC)									
	Operating cycles	1 x 10 ⁵							

¹⁾ Capacitive loads can result in micro-welding on the contacts.

LZS coupling relays with plug-in relays

Relay type		LZS industrial relays: MT, 11-pole (35.5 mm) 3 CO contacts			
General data					
Dimensions (W x H x D)		mm	36 x 69 x 36		
Rated control supply voltage U_s¹⁾	V	24 DC	24 AC	115 AC	230 AC
Rated insulation voltage U_i (Pollution degree 3)	V	250			
Overvoltage category Acc. to IEC 60664-1		III			
Protective separation Between coil and contacts Acc. to IEC 60947-1, Appendix N		No			
Degree of protection of relays/bases		IP50 IP20			
Permissible ambient temperature		-45 ... +50			
• During operation	°C	-40 ... +60	-45 ... +50		
• During storage	°C	-45 ... +80			
Conductor cross-sections					
Connection type		⊕ Screw terminals			
• Solid	mm ²	2 x 2.5			
• Finely stranded with or without end sleeve	mm ²	2 x 1.5			
• Corresponding opening tool		Screwdriver, size 1 or Pozidriv 1			
Control side					
Operating range at 20 °C	V	18 ... 38	19.2 ... 38	92 ... 137	184 ... 264
Power consumption					
• AC	VA	--	2.3		
• DC	W	1.2	--		
Release voltage	V	2.4	9.6	46	92
Protection circuit		--			
Load side					
Switching voltage					
• AC/DC	V	24 ... 250			
Rated currents²⁾					
• Conventional thermal current I_{th}	A	10			
• Rated operational current I_e /DC-13 acc. to utilization categories (IEC 60947-5-1)	A	2 at 24 V, 0.27 at 230 V			
• Rated operational current I_e /AC-15 acc. to utilization categories (IEC 60947-5-1)	A	5 at 24 V and 230 V			
Short-circuit protection					
Short-circuit test with fuse links of operational class gG with short-circuit current $I_k = 1$ kA acc. to IEC 60947-5-1					
• DIAZED, type 5SB	A	10			
Min. contact load (reliability: 1 ppm)		12 V DC/10 mA			
Mechanical endurance	Operat- ing cy- cles	20 x 10 ⁶			
Electrical endurance (resistive load at 250 V AC)	Operat- ing cy- cles	4 x 10 ⁵			





¹⁾ AC voltages, 50 Hz; for 60 Hz operation, the lower response value must be increased by 10%; the power loss will decrease slightly.

²⁾ Capacitive loads can result in micro-welding on the contacts.

Coupling Relays

LZS coupling relays with plug-in relays

Selection and ordering data

Version	Rated control supply voltage U_s (at AC: 50/60 Hz)	Contacts, number of CO contacts	Width mm	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Complete units, 11- and 14-pole, PT series										
 LZS:PT3A5L24	Complete units with plug-in base				Screw terminals 					
	For snap-on mounting onto TH 35 standard mounting rail									
	Comprising:									
	<ul style="list-style-type: none"> • Coupling relays with plug-in relays • Standard plug-in base with screw terminals • LED module (24 V DC version: LED module with freewheel diode) • Fixing/ejection brackets • Labels 									
	3 CO contacts	24 DC 24 AC 115 AC 230 AC	3	28	2	LZS:PT3A5L24 LZS:PT3A5R24 LZS:PT3A5S15 LZS:PT3A5T30		1	5 units	41H
					2			1	5 units	41H
					2			1	5 units	41H
					2			1	5 units	41H
	4 CO contacts	24 DC 24 AC 115 AC 230 AC	4	28	2	LZS:PT5A5L24 LZS:PT5A5R24 LZS:PT5A5S15 LZS:PT5A5T30		1	5 units	41H
					2			1	5 units	41H
				2			1	5 units	41H	
				2			1	5 units	41H	
Complete units with plug-in base With logical separation										
For snap-on mounting onto TH 35 standard mounting rail										
Comprising:										
<ul style="list-style-type: none"> • Coupling relays with plug-in relays • Plug-in base with logical separation and screw terminals • LED module (24 V DC version: LED module with freewheel diode) • Fixing/ejection brackets • Labels 										
4 CO contacts	24 DC 24 AC 115 AC 230 AC	4	28	2	LZS:PT5B5L24 LZS:PT5B5R24 LZS:PT5B5S15 LZS:PT5B5T30		1	5 units	41H	
				2			1	5 units	41H	
				2			1	5 units	41H	
				2			1	5 units	41H	
Complete units, 8- and 14-pole, PT series										
 LZS:PT5D5L24	Complete units with plug-in base With logical separation				Plug-in terminals (push-in) 					
	For snap-on mounting onto TH 35 standard mounting rail									
	Comprising:									
	<ul style="list-style-type: none"> • Coupling relays with plug-in relays • Plug-in base with logical separation and plug-in terminals (push-in) • LED module (24 V DC version: LED module with freewheel diode) • Fixing/ejection brackets • Labels 									
	2 CO contacts	24 DC 230 AC	2	28	2	LZS:PT2D5L24 LZS:PT2D5T30		1	5 units	41H
					2			1	5 units	41H
	4 CO contacts	24 DC 24 AC 115 AC 230 AC	4	28	2	LZS:PT5D5L24 LZS:PT5D5R24 LZS:PT5D5S15 LZS:PT5D5T30		1	5 units	41H
					2			1	5 units	41H
					2			1	5 units	41H
					2			1	5 units	41H

Note:

Logical separation: The terminals for the contacts and the terminals for the coil are arranged on separate levels, e.g. above for contacts and below for the coil. Logical separation is not necessarily protective separation.

Protective separation: Protective separation prevents voltage of one circuit affecting another circuit with sufficient protection (IEC 61140).

LZS coupling relays with plug-in relays

Version	Rated control supply voltage U_s at 50/60 Hz AC	Contacts, number of CO contacts	Width	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	V		mm	d					

Individual modules for customer assembly, PT series

Industrial relays, 8-, 11-, and 14-pole

Mini industrial relays

- With test bracket and mechanical switch position indicator, without LED¹⁾



LZX:PT370024

24 DC	2	22.5	▶	LZX:PT270024	1	1 unit	41H		
	3		▶	LZX:PT370024	1	1 unit	41H		
	4		▶	LZX:PT570024	1	1 unit	41H		
24 AC	2	22.5	▶	LZX:PT270524	1	1 unit	41H		
	3		▶	LZX:PT370524	1	1 unit	41H		
	4		▶	LZX:PT570524	1	1 unit	41H		
115 AC	2	22.5	15	LZX:PT270615	1	1 unit	41H		
	3		2	LZX:PT370615	1	1 unit	41H		
	4		▶	LZX:PT570615	1	1 unit	41H		
230 AC	2	22.5	▶	LZX:PT270730	1	1 unit	41H		
	3		▶	LZX:PT370730	1	1 unit	41H		
	4		▶	LZX:PT570730	1	1 unit	41H		
• With hard gold-plating									
24 DC	4	22.5	▶	LZX:PT580024	1	1 unit	41H		
230 AC			▶	LZX:PT580730	1	1 unit	41H		
• Without test bracket									
24 DC	4	22.5	▶	LZX:PT520024	1	1 unit	41H		
230 AC			15	LZX:PT520730	1	1 unit	41H		

Plug-in bases for PT relays

Standard plug-in bases

For mounting onto TH 35 standard mounting rail



LZS:PT78740

Screw terminals 									
--	2	28	▶	LZS:PT78720	1	1 unit	41H		
	3		▶	LZS:PT78730	1	1 unit	41H		
	4		▶	LZS:PT78740	1	1 unit	41H		

Plug-in bases with logical separation

For mounting onto TH 35 standard mounting rail



LZS:PT78722

--	2	28	▶	LZS:PT78722	1	1 unit	41H
	4		▶	LZS:PT78742	1	1 unit	41H

Plug-in bases with logical separation

For mounting onto TH 35 standard mounting rail



LZS:PT7874P

Plug-in terminals (push-in) 									
--	2	28	▶	LZS:PT7872P	1	1 unit	41H		
	4		▶	LZS:PT7874P	1	1 unit	41H		

¹⁾ The test bracket is designed to be non-latching. If the test bracket is pressed further until 90° has been reached, two small lugs break off and the test bracket can be latched in position.

Note:

Logical separation: The terminals for the contacts and the terminals for the coil are arranged on separate levels, e.g. above for contacts and below for the coil. Logical separation is not necessarily protective separation.

Protective separation: Protective separation prevents voltage of one circuit affecting another circuit with sufficient protection (IEC 61140).

Coupling Relays

LZS coupling relays with plug-in relays

Version	Rated control supply voltage U_s at 50/60 Hz AC	Contacts, number of CO contacts	Width	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	V		mm	d					

Individual modules for customer assembly, PT series

More individual modules

LED modules

• Red

- With freewheel diode	24 DC	--	12.5	▶	LZS:PTML0024		1	1 unit	41H
- Without freewheel diode	24 AC/DC			▶	LZS:PTML0524		1	1 unit	41H
	110 ... 230 AC/DC			▶	LZS:PTML0730		1	1 unit	41H

• Green

- With freewheel diode	24 DC	--	12.5	▶	LZS:PTMG0024		1	1 unit	41H
- Without freewheel diode	24 AC/DC			▶	LZS:PTMG0524		1	1 unit	41H
	110 ... 230 AC/DC			▶	LZS:PTMG0730		1	1 unit	41H

Fixing/ejection brackets for PT base with logical separation

Screw terminals and plug-in terminals (push-in)	--	--	26	▶	LZS:PT17021		100	10 units	41H
---	----	----	----	---	-------------	--	-----	----------	-----

Fixing/ejection brackets for standard plug-in base w/o logical separation

Screw terminals	--	--	26	▶	LZS:PT17024		100	10 units	41H
-----------------	----	----	----	---	-------------	--	-----	----------	-----

Labels

	--	--	26	▶	LZS:PT17040		100	10 units	41H
--	----	----	----	---	-------------	--	-----	----------	-----

RC elements

6 ... 60 AC	--	26	▶	LZS:PTMU0524		1	1 unit	41H
110 ... 230 AC			▶	LZS:PTMU0730		1	1 unit	41H

Freewheel diodes with connection to A1

6 ... 230 DC	--	26	▶	LZS:PTMT00A0		1	1 unit	41H
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Connecting cables, 24-pole

Current carrying capacity 12 A, with supply cable, blue			2		3TX7004-8BA00		1	1 unit	41H
---	--	--	---	--	---------------	--	---	--------	-----

Connecting combs for PT screw base

6-pole, 10 A current carrying capacity, natural-colored				▶	LZS:PT170R6		1	10 units	41H
---	--	--	--	---	-------------	--	---	----------	-----

Connecting brackets for PT push-in base

2-pole, 10 A current carrying capacity, natural-colored				▶	LZS:PT170P1		1	10 units	41H
---	--	--	--	---	-------------	--	---	----------	-----

Individual modules for customer assembly, MT series

Industrial relays, 11-pole

Industrial relays with test bracket

Without LED	24 DC	3	35.5	2	LZX:MT321024		1	1 unit	41H
With LED				▶	LZX:MT323024		1	1 unit	41H
Without LED	24 AC	3	35.5	2	LZX:MT326024		1	1 unit	41H
With LED				15	LZX:MT328024		1	1 unit	41H
Without LED	115 AC	3	35.5	15	LZX:MT326115		1	1 unit	41H
With LED				15	LZX:MT328115		1	1 unit	41H
Without LED	230 AC	3	35.5	2	LZX:MT326230		1	1 unit	41H
With LED				2	LZX:MT328230		1	1 unit	41H

Plug-in bases

For mounting onto TH 35 standard mounting rail					Screw terminals 				
	--	--	38	▶	LZS:MT78750		1	1 unit	41H

Fixing brackets

	--	--	38	▶	LZS:MT28800		1	1 unit	41H
--	----	----	----	---	-------------	--	---	--------	-----






Note:

Logical separation: The terminals for the contacts and the terminals for the coil are arranged on separate levels, e.g. above for contacts and below for the coil. Logical separation is not necessarily protective separation.

Protective separation: Protective separation prevents voltage of one circuit affecting another circuit with sufficient protection (IEC 61140).

SITOP DC power supplies such as 6EP1331-5BA00 or 6EP1331-5BA10 can be used for unavailable coil voltages, see page 15/3.

LZS coupling relays with plug-in relays

Version	Rated control supply voltage U_s at 50/60 Hz AC	Contacts, number of CO contacts	Width mm	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Complete units, 8-pole, 5 mm pinning, RT series									
 LZS:RT4A4T30	Complete units with standard plug-in base For snap-on mounting onto TH 35 standard mounting rail Comprising: • Coupling relays with plug-in relays • Standard plug-in base with screw terminals • LED module (24 V DC version: LED module with freewheel diode) • Fixing/ejection brackets • Labels					Screw terminals 			
	1 CO contact	24 DC 24 AC 115 AC 230 AC	1	15.5	2	LZS:RT3A4L24 LZS:RT3A4R24 LZS:RT3A4S15 LZS:RT3A4T30	1	5 units	41H
					2		1	5 units	41H
					2		1	5 units	41H
					2		1	5 units	41H
	2 CO contacts	24 DC 24 AC 115 AC 230 AC	2	15.5	2	LZS:RT4A4L24 LZS:RT4A4R24 LZS:RT4A4S15 LZS:RT4A4T30	1	5 units	41H
					2		1	5 units	41H
					2		1	5 units	41H
					2		1	5 units	41H
					2		1	5 units	41H
 LZS:RT4B4T30	Complete units with plug-in base With logical separation For snap-on mounting onto TH 35 standard mounting rail Comprising: • Coupling relays with plug-in relays • Plug-in base with logical separation and screw terminals • LED module (24 V DC version: LED module with freewheel diode) • Fixing/ejection brackets • Labels								
	1 CO contact	24 DC 24 AC 115 AC 230 AC	1	15.5	2	LZS:RT3B4L24 LZS:RT3B4R24 LZS:RT3B4S15 LZS:RT3B4T30	1	5 units	41H
					2		1	5 units	41H
					2		1	5 units	41H
					2		1	5 units	41H
	2 CO contacts	24 DC 24 AC 115 AC 230 AC	2	15.5	2	LZS:RT4B4L24 LZS:RT4B4R24 LZS:RT4B4S15 LZS:RT4B4T30	1	5 units	41H
					2		1	5 units	41H
					2		1	5 units	41H
					2		1	5 units	41H
					2		1	5 units	41H
 LZS:RT3D4L24	Complete units with plug-in base With logical separation For snap-on mounting onto TH 35 standard mounting rail Comprising: • Coupling relays with plug-in relays • Plug-in base with logical separation and plug-in terminals (push-in) • LED module (24 V DC version: LED module with freewheel diode) • Fixing/ejection brackets • Labels					Plug-in terminals (push-in) 			
	1 CO contact	24 DC 24 AC 115 AC 230 AC	1	15.5	2	LZS:RT3D4L24 LZS:RT3D4R24 LZS:RT3D4S15 LZS:RT3D4T30	1	5 units	41H
					2		1	5 units	41H
					2		1	5 units	41H
					2		1	5 units	41H
	2 CO contacts	24 DC 24 AC 115 AC 230 AC	2	15.5	2	LZS:RT4D4L24 LZS:RT4D4R24 LZS:RT4D4S15 LZS:RT4D4T30	1	5 units	41H
					2		1	5 units	41H
					2		1	5 units	41H
					2		1	5 units	41H
					2		1	5 units	41H

Note:

Logical separation: The terminals for the contacts and the terminals for the coil are arranged on separate levels, e.g. above for contacts and below for the coil. Logical separation is not necessarily protective separation.

Protective separation: Protective separation prevents voltage of one circuit affecting another circuit with sufficient protection (IEC 61140).


Coupling Relays



LZS coupling relays with plug-in relays



Version	Rated control supply voltage U_s at 50/60 Hz AC	Contacts, number of CO contacts	Width	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	V		mm	d					


Individual modules for customer assembly, RT series



Print relays, 8-pole, 5 mm pinning


	Print relays With hard gold-plating								
	Version with 1 CO contact								
LZX:RT314024	24 DC	1	12.7	▶ 15	LZX:RT315024		1	1 unit	41H
	230 AC				LZX:RT315730		1	1 unit	41H

	Print relays									
	Version with 1 CO contact									
		24 DC	1	12.7	▶ 15	LZX:RT314024		1	1 unit	41H
		24 AC				LZX:RT314524		1	1 unit	41H
	115 AC				LZX:RT314615		1	1 unit	41H	
	230 AC			▶ 15	LZX:RT314730		1	1 unit	41H	
	Version with 2 CO contacts									
		12 DC	2	12.7	▶ 15	LZX:RT424012		1	1 unit	41H
		24 DC				LZX:RT424024		1	1 unit	41H
		24 AC				LZX:RT424524		1	1 unit	41H
	115 AC				LZX:RT424615		1	1 unit	41H	
	230 AC			▶ 15	LZX:RT424730		1	1 unit	41H	


	Standard plug-in bases				Screw terminals 				
	For mounting onto TH 35 standard mounting rail								
	--	--	15.5	▶	LZX:RT78725		1	1 unit	41H


	Plug-in bases with logical separation								
	For mounting onto TH 35 standard mounting rail								
	--	--	15.5	▶	LZX:RT78726		1	1 unit	41H


	Plug-in bases with logical separation				Plug-in terminals (push-in) 				
	For mounting onto TH 35 standard mounting rail								
	--	--	15.5	▶	LZX:RT7872P		1	1 unit	41H


	LED modules										
	• Red										
		With freewheel diode	24 DC	--	15.5	▶	LZX:PTML0024		1	1 unit	41H
		Without freewheel diode	24 AC/DC	--		▶	LZX:PTML0524		1	1 unit	41H
			110 ... 230 AC/DC	--		▶	LZX:PTML0730		1	1 unit	41H
		• Green									
	With freewheel diode	24 DC	--	15.5	▶	LZX:PTMG0024		1	1 unit	41H	
	Without freewheel diode	24 AC/DC	--		▶	LZX:PTMG0524		1	1 unit	41H	
		110 ... 230 AC/DC	--		▶	LZX:PTMG0730		1	1 unit	41H	


	Fixing/ejection brackets								
	For RT base								
	--	--	15.5	▶	LZX:RT17016		100	10 units	41H


	Labels								
	--	--	15.5	▶	LZX:RT17040		100	10 units	41H

	RC elements									
		6 ... 60 AC	--	15.5	▶	LZX:PTMU0524		1	1 unit	41H
		110 ... 230 AC				▶	LZX:PTMU0730		1	1 unit

	Freewheel diodes with connection to A1								
		6 ... 230 DC	--	15.5	▶	LZX:PTMT00A0		1	1 unit

	Connecting cables, 24-pole								
	Current carrying capacity 12 A, with supply cable, blue	--	--	--	2	3TX7004-8BA00		1	1 unit

	Connecting combs for RT screw base								
	8-pole, 10 A current carrying capacity, natural-colored	--	--	--	▶	LZX:RT170R8		1	10 units

	Connecting brackets for push-in base								
	2-pole, 10 A current carrying capacity, natural-colored	--	--	--	▶	LZX:RT170P1		100	10 units

Note:

SITOP DC power supplies such as 6EP1331-5BA00 or 6EP1331-5BA10 can be used for unavailable coil voltages, see page 15/3.