

SIRIUS 3R



3RT10, 3RH11 Coupling Relays (Interfaces)

Description

DC operation

IEC 60 947 and EN 60 947 (VDE 0660)

The 3RT10 coupling relays for switching motors and 3RH11 for auxiliary circuits are laid out to the special requirements of the connection to solid-state control equipment.

Coupling relays have a low power consumption, an extended working range of the solenoid coil (0.7 to $1.25 \times U_s$) as well as an integrated surge suppression against switching voltages (exceptions: 3RT10 1.-1HB4. and 3RH11...-1HB40).

Onto 3RT10 1. and 3RH11 coupling relays of size S00, auxiliary switch blocks cannot be fitted. Onto size S0, two single-pole auxiliary switch blocks can be snapped on.

SIRIUS 3R



3RT10 Coupling Relays (Interfaces) for Switching Motors

Selection and ordering data

Surge suppressor	Ratings					Auxiliary contacts		3RT10 coupling relays		Weight approx.
	AC-2 and AC-3 duty T_U : to 60°C					Identifi- cation number	Design number	Order No.	Price	
	Operational current I_e	Output of three-phase motors at 50 Hz and								
	at 400 V	230 V	400 V	500 V	690 V					
	A	kW	kW	kW	kW	NO	NC	Preferred type	1 unit	kg

With screw connection · for screw and snap-on mounting onto 35 mm standard rail

DC operation

• Size S00

Rated control supply voltage $U_s = 24$ V DC, coil voltage tolerance 17 to 32 V
Power consumption of the solenoid coils 2.3 W at 24 V (no auxiliary block mountable)

3RT10 1.-1.B4.



Diode, varistor or RC element mountable	7	2.2	3	3.5	4	10 01	1	–	▶	3RT10 15-1HB41 3RT10 15-1HB42	0.26
Built-in diode	7	2.2	3	3.5	4	10 01	1	–	▶	3RT10 15-1JB41 3RT10 15-1JB42	0.26
Built-in varistor	7	2.2	3	3.5	4	10 01	1	–	▶	3RT10 15-1KB41 3RT10 15-1KB42	0.26
Diode, varistor or RC element mountable	9	3	4	4.5	5.5	10 01	1	–	▶	3RT10 16-1HB41 3RT10 16-1HB42	0.26
Built-in diode	9	3	4	4.5	5.5	10 01	1	–	▶	3RT10 16-1JB41 3RT10 16-1JB42	0.26
Built-in varistor	9	3	4	4.5	5.5	10 01	1	–	▶	3RT10 16-1KB41 3RT10 16-1KB42	0.26
Diode, varistor or RC element mountable	12	3	5.5	5.5	5.5	10 01	1	–	▶	3RT10 17-1HB41 3RT10 17-1HB42	0.26
Built-in diode	12	3	5.5	5.5	5.5	10 01	1	–	▶	3RT10 17-1JB41 3RT10 17-1JB42	0.26
Built-in varistor	12	3	5.5	5.5	5.5	10 01	1	–	▶	3RT10 17-1KB41 3RT10 17-1KB42	0.26

3RT10 2.-1KB40



• Size S0

Rated control supply voltage $U_s = 24$ V DC, coil voltage tolerance 17 to 32 V
Power consumption of the solenoid coils 4.2 W at 24 V (two single-pole auxiliary switch blocks mountable)

Built-on varistor	12	3	5.5	7.5	7.5	–	–	–	▶	3RT10 24-1KB40	0.6
	17	4	7.5	10	10	–	–	–	▶	3RT10 25-1KB40	0.6
	25	5.5	11	11	11	–	–	–	▶	3RT10 26-1KB40	0.6

Accessories, see page 6/11.
Technical data, see page 6/30.
Internal circuit diagrams, see page 6/31.
Dimensions, see page 6/52.

3RT10 Coupling Relays (Interfaces) for Switching Motors

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Selection and ordering data

CAGE CLAMP

Surge suppressor	Ratings AC-2 and AC-3 duty T_U : to 60°C	Output of three-phase motors at 50 Hz and					Auxiliary contacts		3RT10 coupling relays		Weight approx.
	Operational current I_e at 400 V	230 V	400 V	500 V	690 V	Identifi- cation number	Design number	Order No.	Price		
	A	kW	kW	kW	kW	NO	NC	Preferred type	1 unit	kg	

With Cage Clamp connection · for screw and snap-on mounting onto 35 mm standard rail

DC operation

• Size S00

Cage Clamp connection for all terminals

Rated control supply voltage $U_s = 24$ V DC, coil voltage tolerance 17 to 32 V

Power consumption of the solenoid coils 2.3 W at 24 V (no auxiliary block mountable)

3RT10 15-2JB41



Diode, varistor or RC element mountable	7	2.2	3	3.5	4	10 01	1	–	▶	3RT10 15-2HB41 3RT10 15-2HB42	0.26
Built-in diode	7	2.2	3	3.5	4	10 01	1	–	▶	3RT10 15-2JB41 3RT10 15-2JB42	0.26
Built-in varistor	7	2.2	3	3.5	4	10 01	1	–	▶	3RT10 15-2KB41 3RT10 15-2KB42	0.26
Diode, varistor or RC element mountable	9	3	4	4.5	5.5	10 01	1	–	▶	3RT10 16-2HB41 3RT10 16-2HB42	0.26
Built-in diode	9	3	4	4.5	5.5	10 01	1	–	▶	3RT10 16-2JB41 3RT10 16-2JB42	0.26
Built-in varistor	9	3	4	4.5	5.5	10 01	1	–	▶	3RT10 16-2KB41 3RT10 16-2KB42	0.26
Diode, varistor or RC element mountable	12	3	5.5	5.5	5.5	10 01	1	–	▶	3RT10 17-2HB41 3RT10 17-2HB42	0.26
Built-in diode	12	3	5.5	5.5	5.5	10 01	1	–	▶	3RT10 17-2JB41 3RT10 17-2JB42	0.26
Built-in varistor	12	3	5.5	5.5	5.5	10 01	1	–	▶	3RT10 17-2KB41 3RT10 17-2KB42	0.26

3RT10 26-3KB40



• Size S0

Cage Clamp connection for auxiliary and coil terminals

Rated control supply voltage $U_s = 24$ V DC, coil voltage tolerance 17 to 32 V

Power consumption of the solenoid coils 4.2 W at 24 V (two single-pole auxiliary switch blocks mountable)

Built-on varistor	12	3	5.5	7.5	7.5	–	–	–	▶	3RT10 24-3KB40	0.56
	17	4	7.5	10	11	–	–	–	▶	3RT10 25-3KB40	0.56
	25	5.5	11	11	11	–	–	–	▶	3RT10 26-3KB40	0.56

Accessories, see page 6/11.
 Technical data, see page 6/30.
 Description, see page 6/27.
 Internal circuit diagrams, see page 6/31.
 Dimensions, see page 6/52.



3RH11 Coupling Relays (Interfaces) for Switching Auxiliary Circuits

Selection and ordering data

Surge suppressor	Rated operational current I_e /AC-15/AC-14 at				Contacts			3RH11 coupling relays		Weight approx. kg
	230 V	400 V	500 V	690 V	Identifi- cation number acc. to EN 50 011	Design NO	NC	Order No.	Price 1 unit	
	A	A	A	A				Preferred type		

With screw connection · for screw and snap-on mounting onto 35 mm standard rail

3RH11...-1.B40



• **DC operation size S00**

Rated control supply voltage $U_s = 24$ V DC, coil voltage tolerance 17 to 32 V
Power consumption of the solenoid coils 2.3 W at 24 V (no auxiliary block mountable)

Diode, varistor or RC element mountable	6	3	2	1	40 E	4	–	▶ 3RH11 40-1HB40	0.25
					31 E	3	1	▶ 3RH11 31-1HB40	
					22 E	2	2	▶ 3RH11 22-1HB40	
Built-in diode	6	3	2	1	40 E	4	–	▶ 3RH11 40-1JB40	0.25
					31 E	3	1	▶ 3RH11 31-1JB40	
					22 E	2	2	▶ 3RH11 22-1JB40	
Built-in varistor	6	3	2	1	40 E	4	–	▶ 3RH11 40-1KB40	0.25
					31 E	3	1	▶ 3RH11 31-1KB40	
					22 E	2	2	▶ 3RH11 22-1KB40	

With Cage Clamp connection · for screw and snap-on mounting onto 35 mm standard rail

CAGE CLAMP

3RH11 22-2KB40



• **DC operation size S00**

Cage Clamp connection for all terminals
Rated control supply voltage $U_s = 24$ V DC, coil voltage tolerance 17 to 32 V
Power consumption of the solenoid coils 2.3 W at 24 V (no auxiliary block mountable)

Diode, varistor or RC element mountable	6	3	2	1	40 E	4	–	▶ 3RH11 40-2HB40	0.26
					31 E	3	1	▶ 3RH11 31-2HB40	
					22 E	2	2	▶ 3RH11 22-2HB40	
Built-in diode	6	3	2	1	40 E	4	–	▶ 3RH11 40-2JB40	0.26
					31 E	3	1	▶ 3RH11 31-2JB40	
					22 E	2	2	▶ 3RH11 22-2JB40	
Built-in varistor	6	3	2	1	40 E	4	–	▶ 3RH11 40-2KB40	0.26
					31 E	3	1	▶ 3RH11 31-2KB40	
					22 E	2	2	▶ 3RH11 22-2KB40	

Accessories, see page 6/11.
Technical data, see page 6/30.
Description, see page 6/27.
Internal circuit diagrams, see page 6/31.
Dimensions, see page 6/52.

3RT10, 3RH11 Coupling Relays (Interfaces)

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Technical data

Any technical data not given in the table below are identical to those of the 3RH11 contactor relays (from page 6/15 on) and the 3RT10 contactor relays for switching motors in Part 3.
The coupling relays size S00 (3RH11 and 3RT10 1.) cannot be expanded by auxiliary switch blocks.
Two single-pole auxiliary switch blocks can be mounted onto the 3RT10 2. coupling relay (see Part 3).

Contactor – Type		3RT10 1.-1HB4. 3RH11 . . -1HB40 S00	3RT10 1.-1JB4. 3RH11 . . -1JB40 S00	3RT10 1.-1KB4. 3RH11 . . -1KB40 S00	3RT10 2.-1KB40 S0					
Size										
Coil voltage tolerance		0.7 to 1.35 x $U_s \cong 17$ to 32 V								
Power consumption of the coils (with cold coil)		at U_s	17 V	1.2 W	1.2 W	1.2 W	2.3 W	2.3 W	2.1 W	
closing = closed			24 V	2.3 W	2.3 W	2.3 W	30 V	3.6 W	4.2 W	6.6 W
Permissible residual current of the electronics (with 0 signal)			$< 10 \text{ mA} \times \left(\frac{24\text{V}}{U_s}\right)$		$< 10 \text{ mA} \times \left(\frac{24\text{V}}{U_s}\right)$	$< 10 \text{ mA} \times \left(\frac{24\text{V}}{U_s}\right)$	$< 6 \text{ mA} \times \left(\frac{24\text{V}}{U_s}\right)$			
Surge suppression of the coil		without overvoltage protection		with diode		with varistor		with varistor		
Operating times of the coupling relays										
Closing	at 17 V	ON-delay	NO	40 to 120 ms	40 to 120 ms	40 to 120 ms	93 to 270 ms	83 to 250 ms		
		OFF-delay	NC	30 to 70 ms	30 to 70 ms	30 to 70 ms				
	at 24 V	ON-delay	NO	30 to 60 ms	30 to 60 ms	30 to 60 ms	64 to 87 ms	55 to 78 ms		
		OFF-delay	NC	20 to 40 ms	20 to 40 ms	20 to 40 ms				
	at 30 V	ON-delay	NO	20 to 50 ms	20 to 50 ms	20 to 50 ms	53 to 64 ms	45 to 56 ms		
		OFF-delay	NC	15 to 30 ms	15 to 30 ms	15 to 30 ms				
Opening	at 17 to 30 V	OFF-delay	NO	7 to 17 ms	40 to 60 ms	7 to 17 ms	18 to 19 ms			
		ON-delay	NC	22 to 30 ms	60 to 70 ms	22 to 30 ms	24 to 25 ms			
Upright mounting position		Please enquire								



DC operation

to be connected to the solenoid coil terminal A1 of L+.

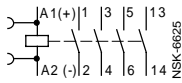
3RT10 1. coupling relays for switching motors, size S00

Terminal designations acc. to EN 50 012
(no auxiliary block can be snapped on)

Surge suppressor mountable

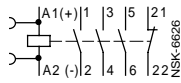
1 NO

Ident. No.: 10E



1 NC

01E



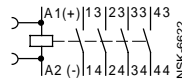
3RH11 coupling relays for auxiliary circuits, size S00

Terminal designations acc. to EN 50 011
(no auxiliary block can be snapped on)

Surge suppressor mountable

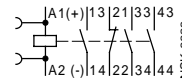
4 NO

Ident. No.: 40E



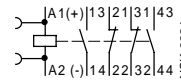
3 NO + 1 NC

31E



2 NO + 2 NC

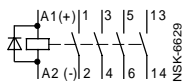
22E



Diode built-in

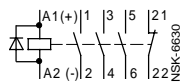
1 NO

Ident. No.: 10E



1 NC

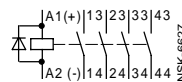
01E



Diode built-in

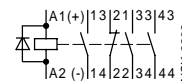
4 NO

Ident. No.: 40E



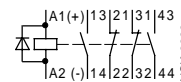
3 NO + 1 NC

31E



2 NO + 2 NC

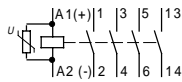
22E



Varistor built-in

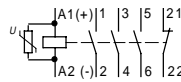
1 NO

Ident. No.: 10E



1 NC

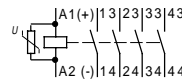
01E



Varistor built-in

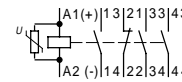
4 NO

Ident. No.: 40E



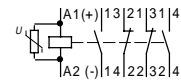
3 NO + 1 NC

31E



2 NO + 2 NC

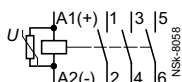
22E



3RT10 2. coupling relays for switching motors, size S0

(two single-pole auxiliary switch blocks can be snapped on)

Varistor built-on



Surge suppressor for size S00

(plug-in direction coded)

Diode



Varistor



RC element



Diode assembly



Diode with LED



Varistor with LED



3RT10, 3RH11 Coupling Relays (Interfaces)

SIRIUS 3R



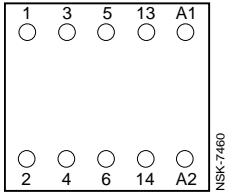
Position of terminals

Size S00

3RT10 1. coupling relays

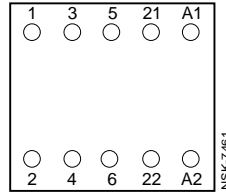
1 NO

Ident. No.: 10E



1 NC

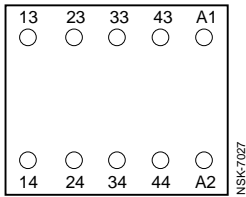
01



3RH11 coupling relays

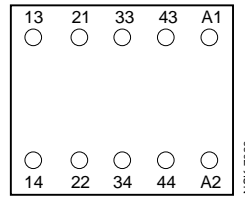
4 NO

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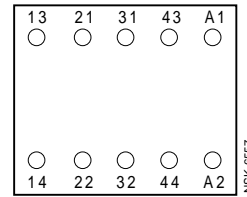
3 NO + 1 NC

31E



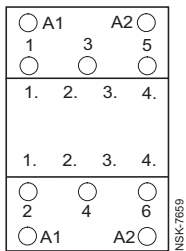
2 NO + 2 NC

22E



Size S0

3RT10 2. coupling relay



3RH19 24, 3TX7 090 Interfaces for Mounting onto Contactors

Description

DC operation

IEC 60 947 and DIN VDE 0660
The interfaces are suitable for use in any climate. They are safe from touch according to DIN VDE 0106 Part 100. The terminal designations are in accordance with EN 50 005.

Design

System compatible actuation with 24 V DC, coil voltage tolerance 17 V to 30 V.

Small power consumption of the coils in accordance with the technical data of the electronic systems. An LED indicates the switching condition.

Surge suppression




The 3TX7 090-0D and 3RH19 24-1GP11 interfaces have an integrated varistor for the contactor coil to be operated.

Mounting

The 3RH19 24-1GP11 interfaces are connected directly to the coil and the 3TX7 090 interfaces are snapped onto the auxiliary switch blocks laterally.

Selection and ordering data

DC operation - with screw connection

For contactor		Contacts	Design	Order No.	Price	Weight approx.	Packing
Size	Type			Preferred type	1 unit	kg	Units
Interface for direct mounting onto the contactor coil							
3RH19 24-1GP11	S0 to S3	SIRIUS 3R 	1 NO	with surge suppressor	3RH19 24-1GP11	0.041	1
							
Interface for lateral snapping onto the auxiliary switch							
3TX7 090-0D	3 to 14	3TF46 to 3TF69, 3TK48 to 3TK56	1 NO	with surge suppressor	3TX7 090-0D	0.075	1
							

3RH19 24, 3TX7 090 Interfaces for Mounting onto Contactors

Technical data

General data

Rated insulation voltage U_i (pollution degree 3)	V	300
Degree of protection	Terminals Housing	IP 20 IP 40
Permissible ambient temperature	during operation when stored	°C °C –25 to +60 –40 to +80
Conductor cross-sections		
– solid	mm ²	2 x (0.5 to 2.5)
– finely stranded with end sleeve	mm ²	2 x (0.5 to 1.5)
– terminal screws		M3
Short-circuit protection (weld-free protection at $I_k \geq 1$ kA)		
Fuses, utilization category gL/gG	A	6
NH	Type 3NA	
DIAZED	Type 5SB	
NEOZED	Type 5SE	

Control circuit

Rated control supply voltage U_s	DC	V	24
Coil voltage tolerance	DC	V	17 to 30
Power consumption of the coils at U_s		W	0.5
Current input		mA	20
Release voltage		V	≥ 4
Function indicator			LED yellow
Snubber			Varistor

Load circuit

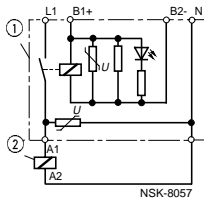
Mechanical endurance		Oper- ating cycles	20 x 10 ⁶
Electrical endurance at I_e		Oper- ating cycles	1 x 10 ⁵
Operating frequency		1/h	5000 operating cycles
Make-time		ms	approx. 7
Break-time		ms	approx. 4
Bounce time		ms	approx. 2
Contact material			AgSnO
Operational voltage		V	24 to 250 AC/DC
Permissible residual current of the electronics (with 0 signal)		mA	2.5
Rated currents¹⁾			
Conventional thermal current I_{th}	A		6
			AC-15 DC-13
Rated operational current I_e acc. to utilization categories (DIN VDE 0660)	at 24 V	A	3
	110 V	A	3
	230 V	A	3
			0.1
Operational current with resistive load acc. to DIN VDE 0435 (relay standard) and DIN VDE 0660	at 24 V	A	6
	110 V	A	6
	230 V	A	6
			AC-12 DC-12
			6 6
			0.3
			0.2

1) Capacitive loads may cause micro welding at the contacts.

3RH19 24, 3TX7 090 Interfaces for Mounting onto Contactors

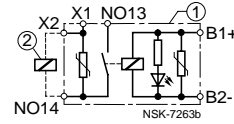
Internal circuit diagrams

3RH19 24-1GP11
with surge suppression



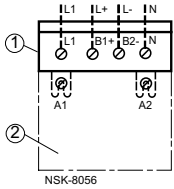
- ① Interface
- ② Contactor

3TX7 090-0D
with surge suppression



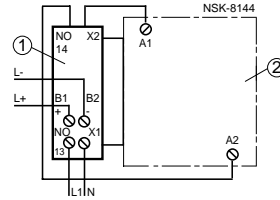
Typical circuits

3RH19 24-1GP11
with surge suppression



- ① Interface
- ② Contactor

3TX7 090-0D
with surge suppression



Modular Terminal-Type Interfaces

3TX7 002, 3TX7 003 Coupling Relays and Optocouplers

Description

AC and DC operation

DIN VDE 0110 Part 1, DIN VDE 0435, DIN VDE 0660 and EN 50 005

The input and output interfaces differ in the location of terminals and LEDs. A blank label is fitted on each interface to enable identification of the devices.

Small power consumption of the coils matches the technical data of the electronics systems.

The contact of an optocoupler is a semiconductor, which is not subject to wear. Welding is not possible.

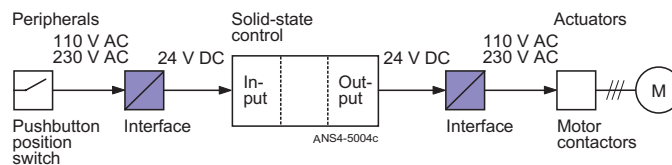
Surge suppression

The connection of inductive loads with a surge suppressor increases the service life of the coupling relays.

Mounting

For snapping onto horizontal and vertical standard mounting rail. With vertical rail and close mounting the permissible ambient temperature $T_u = 40^\circ\text{C}$. Can be mounted in any position.

Typical circuit




Selection and ordering data


AC and DC operation for snap-on mounting onto 35 mm standard rail

Rated control supply voltage U_s	Contacts (version)	Width	Order No.	Price	Weight approx.	Pack.
50/60 Hz AC	NO CO	mm	Preferred type	1 unit	kg	Units

3TX7 002 and 3TX7 003 coupling relays

	• Output interfaces with screw connection					
	24 V AC/DC	1	–	11.5	▶ 3TX7 002-1AB00	0.035 20
	24 V AC/DC	1 (hard gold-plated)	–		▶ 3TX7 002-1AB02	
	24 V AC/DC	–	1	17.5	▶ 3TX7 002-1BB00	0.045 20
	230 V AC/DC	–	1		▶ 3TX7 002-1BF00	
	24 V AC/DC	2	–	22.5	▶ 3TX7 002-1CB00	0.055 20
	24 V AC/DC	–	2 (hard gold-plated)		▶ 3TX7 002-1FB02	
	• Output interfaces with Cage Clamp connection					
	24 V AC/DC	1	–	11.5	3TX7 003-1AB00	0.035 20
	• Input interfaces with screw connection					
24 V AC/DC	1	–	11.5	▶ 3TX7 002-2AB00	0.035 20	
110 V AC/DC	1	–		▶ 3TX7 002-2AE00		
230 V ¹⁾ AC/DC	1	–	11.5	▶ 3TX7 002-2AF00	0.035 20	
230 V ¹⁾ AC/DC	1	–		▶ 3TX7 002-2AF05		
230 V AC/DC	–	1 (hard gold-plated)	17.5	3TX7 002-2BF02	0.045 20	

3TX7 002 optocouplers

	• Output interfaces with screw connection					
	24 V DC	1 (semiconductor)	–	12.5	3TX7 002-3AB00	0.035 20
				11.5	3TX7 002-3AB01	
	• Input interfaces with screw connection					
	24 V AC/DC	1 (semiconductor)	–	12.5	3TX7 002-4AB00	0.035 20
110 to 240 V AC	1 (semiconductor)	–	12.5	3TX7 002-4AG00		

Accessories

• Connecting lead for 3TX7 002, 3TX7 003						
24 terminals with leads, blue				3TX7 004-8BA00	0.040	5

1) Observe max. permissible conductor length
See page 6/37.

Modular Terminal-Type Interfaces

3TX7 002, 3TX7 003 Coupling Relays

Technical data

General data

Rated insulation voltage U_i (pollution degree 3)	V	300
Degree of protection	for 3TX7 00.-	1 .. 00 1 .. 02
	Housing	IP 20 IP 20
	Relay	IP 40 IP 67
Short-circuit protection (weld-free protection at $I_k \geq 1$ kA)		
Fuses, utilization category gL/gG	A	4
Permissible ambient temperature	during operation	°C -25 to +55
	when stored	°C -40 to +80
Conductor cross-sections		
Screw connection:		
solid	mm ²	1 x (0.25 to 4)
finely stranded with or without end sleeve	mm ²	1 x (0.5 to 2.5)
Terminal screws		M3
Cage Clamp connection (at 3TX7 003):		
solid, finely stranded	mm ²	1 x (0.08 to 2.5)
finely stranded with end sleeve	mm ²	1 x (0.25 to 2.5)

Control circuit

Type	3TX7 002-/3TX7 003-	1AB02	1AB00	1BB00 1FB02	1CB00	2AB00	2AE00	1BF00 2BF02	2AF00	2AF05	
Working range		0.8 to 1.25 x U_s					0.8 to 1.1 x U_s				
Power consumption of the coils at U_s	W	0.25	0.5	0.5	0.8	0.5	0.5	1	1	1	
Release voltage	% of U_s	$\geq 10\%$									$\geq 25\%$
Max. permissible conductor length (min. cross-section: 0.75 mm ²)	AC	m	300	300	300	300	300	15	7	7	350
	DC	m	2000								
Permissible residual current of the electronics (with 0 signal)	mA	2	2	2	4	2	0.4	0.35	0.35	4	
Operating times at U_s	ON-delay	ms	< 8								
	OFF-delay	ms	< 10								
Function indicator			LED yellow								

Load side

Rated currents¹⁾				
Conventional thermal current I_{th}	A	6		
Rated operational current I_e acc. to utilization categories (DIN VDE 0660) (3TX7 002-1CB00: AC-15, $I_e = 2A$)		AC-15	DC-13	
	24 V	A	3	1.0
	110 V	A	3	0.2
	230 V	A	3	0.1
Operational current with resistive load acc. to DIN VDE 0435 (relay standard) and DIN VDE 0660		AC-12	DC-12	
	24 V	A	6	6
	110 V	A	6	0.2
	230 V	A	6	0.2
Operational voltage	AC/DC	V	24 to 250	
Min. contact loading for 3TX7 00.-1..00, 3TX7 002-2A..00, 3TX7 002-2AF05			24 V AC/DC, 10 mA	
Min. contact loading for 3TX7 002-...02			1 V AC/DC, 0.1 mA	
Mechanical endurance			20 x 10 ⁶ operating cycles	
Electrical endurance at I_e			1 x 10 ⁵ operating cycles	
Operating frequency	1/h		5000 operating cycles	
Contact material at 3TX7 002-...02			Ag/Ni 0.15 hard gold-plated	
Power limit/hard gold plating at 3TX7 002-...02			30 V/20 mA	

Note: The connection of a suppression circuit to inductive loads increases the service life of the coupling relays.

- 1) Capacitive loads may cause micro welding at the contacts.
- 2) 3TX7 002-1FB02 without safe isolation acc. to DIN VDE 0106 Part 101.

Modular Terminal-Type Interfaces

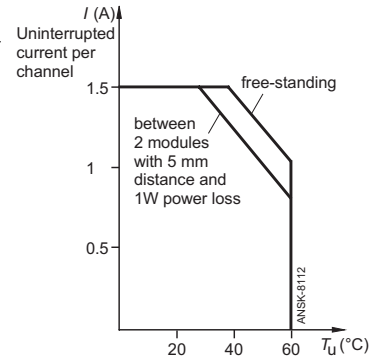
3TX7 002 Optocouplers

Technical data

General data

Rated insulation voltage U_i (pollution degree 3)	V	300
Optoelectronic coupler for safe isolation acc. to DIN VDE 0884	V	to 300
Conductor cross-sections solid	mm ²	1 x (0.25 to 4)
finely stranded with or without end sleeve	mm ²	1 x (0.5 to 2.5)
Terminal screws		M3

Derating diagram for 3TX7 002-3AB01
Load current as a function of the ambient temperature T_u



Permissible ambient temperature	during operation	°C	-20 to +60
	when stored	°C	-40 to +80

Control circuit

Type	3TX7 002-	3AB00	3AB01	4AB00	4AG00
Working range	V	DC 17 to 30	DC 17 to 30	AC/DC 17 to 30	AC 88 to 264 V
Current input	mA	< 18 at 17 V DC < 20 at 24 V DC < 22 at 30 V DC	< 5 at 17 V DC < 7 at 24 V DC < 8.5 at 30 V DC	< 10 at 17 V AC/DC < 14 at 24 V AC/DC < 18 at 30 V AC/DC	< 9 at 88 V AC < 24 at 230 V AC < 28 at 264 V AC
Release voltage	V	> 5	> 8	> 5	> 40
Operating times ON-delay	ms	< 10 at 17 V DC 24 V DC 30 V DC	< 0.1 at 17 V DC 24 V DC 30 V DC	< 1 at 17 V AC/DC 24 V AC/DC 30 V AC/DC	< 18 at 88 V AC < 20 at 230 V AC < 22 at 264 V AC
OFF-delay	ms	< 10 at 17 V DC 24 V DC 30 V DC	< 0.1 at 17 V DC 24 V DC 30 V DC	< 18 at 17 V AC/DC < 25 at 24 V AC/DC < 30 at 30 V AC/DC	< 10 at 88 V AC < 20 at 230 V AC < 25 at 264 V AC
Function indicator		LED yellow	LED yellow	LED yellow	LED yellow
Max. permissible conductor length (min. cross-section: 0.75 mm ²)	AC	m	-	1000	140
	DC	m	2000	2000	-

Load side

Type	3TX7 002-	3AB00	3AB01	4AB00	4AG00
Rated operational current I_e		1.8 A	1.5 A (see derating diagram)	100 mA	100 mA
Short time load rating	A ms	20 20	4 0.2	1 20	1 20
Contacts		1 NO contact Triac	1 NO contact Transistor	1 NO contact Transistor	1 NO contact Transistor
Operational voltage¹⁾ (Working range)		r.m.s. 50/60 Hz AC 48 to 264 V	DC ≤ 60 V	DC ≤ 30 V	DC ≤ 60 V
Minimum load current	mA	60	-	-	-
Conductive voltage drop	V	≤ 1.5	≤ 1.1	≤ 1.7	≤ 0.3
Residual current of the electronics (with 0 signal)		< 5 mA	< 0.1 mA	< 0.1 mA	1 μA
Operating frequency		1 Hz at I_e	1 Hz at I_e	5 Hz	5 Hz

1) Observe minimal switching voltage with 3TX7 002-3AB00.

Modular Terminal-Type Interfaces

3TX7 002, 3TX7 003 Coupling Relays and Optocouplers

Internal circuit diagrams

Coupling relays

Terminal designations acc. to EN 50 005

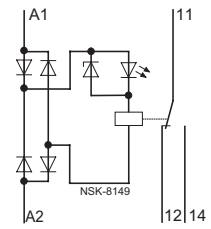
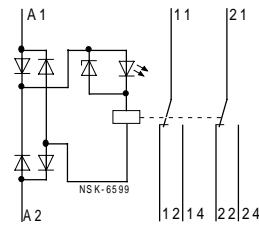
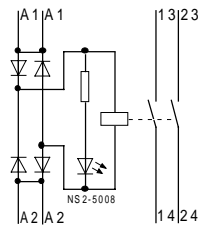
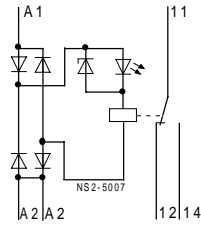
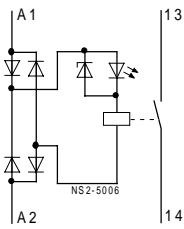
3TX7 002- . A . 00
-1AB02
-2AF05
3TX7 003-1AB00

-1B . 00

-1CB00

-1FB02

-2BF02



Optocouplers

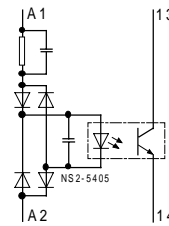
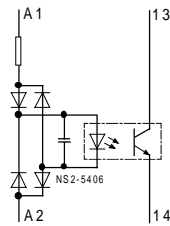
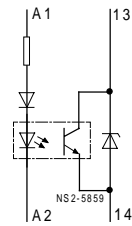
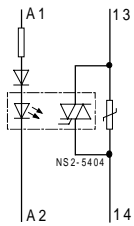
Terminal designations acc. to EN 50 005

3TX7 002-3AB00

-3AB01

-4AB00

-4AG0 .



Position of terminals

Coupling relays

Output interfaces

3TX7 002-1AB0 .
3TX7 003-1AB00

-1B . 00

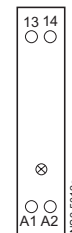
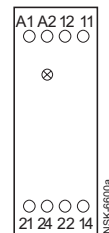
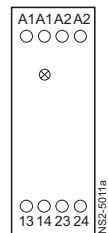
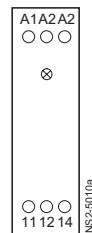
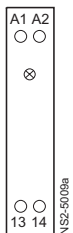
-1CB00

-1FB02

Input interfaces

3TX7 002-2A . 0 .
3TX7 002-4A . 0 .

-2BF02



Optocouplers

Output interfaces

3TX7 002-3AB0 .

Input interfaces

3TX7 002-4A . 0 .

