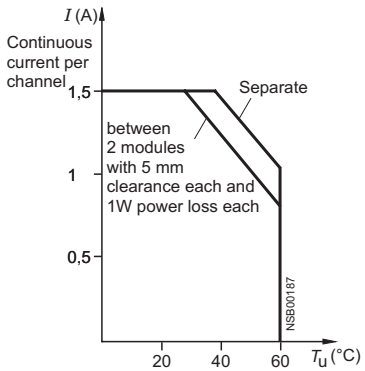
3TX7 Coupling Relays, Narrow Design

Semiconductor couplers

Technical specifications

Derating diagram for 3TX7 002-3AB01 load current depending on the ambient temperature T_u



Type			3TX7 004-1.F.5
General data			
Rated insulation voltage U_i (degree of pollution 3)		V	300
Optoelectronic coupling element for safe isolation according to EN 60947-1, Appendix N		V	Up to 300
Conductor cross-sections			
• Solid		mm^2	1 x (0.25 ... 4)
• Finely stranded with or without end sleeve		mm^2	1 x (0.5 ... 2.5)
• Terminal screws			M3
Permissible ambient temperature			
• During operation		°C	-25 ... +60
• During storage		°C	-40 ... +80

Type	3TX7002-		3AB00	3AB01	4AB00	4AG00
Control side						
Operating range		V	17 ... 30 DC	11 ... 30 DC	17 ... 30 AC/DC	88 ... 264 AC
Control side power consumption						
	at 17 V DC	mA	< 18	< 5	--	--
	at 24 V DC	mA	< 20	< 7	--	--
	at 30 V DC	mA	< 22	< 8.5	--	--
	at 17 V AC/DC	mA	--	--	< 10	--
	at 24 V AC/DC	mA	--	--	< 14	--
	at 30 V AC/DC	mA	--	--	< 18	--
	at 88 V AC	mA	--	--	--	< 9
	at 230 V AC	mA	--	--	--	< 24
	at 264 V AC	mA	--	--	--	< 28
Release voltage		V	> 5	> 8	> 5	> 40
Operating times						
• ON-delay	at 17 V DC	ms	< 10	< 0.1	1	--
	at 24 V DC	ms	< 10	< 0.1	1	--
	at 30 V DC	ms	< 10	< 0.1	1	--
	at 17 V AC/DC	ms	--	--	< 1	--
	at 24 V AC/DC	ms	--	--	< 1	--
	at 30 V AC/DC	ms	--	--	< 1	--
	at 88 V AC	ms	--	--	--	< 18
	at 230 V AC	ms	--	--	--	< 20
	at 264 V AC	ms	--	--	--	< 22
• OFF-delay	at 17 V DC	ms	< 10	< 0.1	< 18	--
	at 24 V DC	ms	< 10	< 0.1	< 25	--
	at 30 V DC	ms	< 10	< 0.1	< 30	--
	at 17 V AC/DC	ms	--	--	< 18	--
	at 24 V AC/DC	ms	--	--	< 25	--
	at 30 V AC/DC	ms	--	--	< 30	--
	at 88 V AC	ms	--	--	--	< 10
	at 230 V AC	ms	--	--	--	< 20
	at 264 V AC	ms	--	--	--	< 25
Function display			Yellow LED	Yellow LED	Yellow LED	Yellow LED
Max. permissible cable length (min. conductor cross-section: 0.75 mm^2)	AC	m	--	--	1000	140
	DC	m	2000	2000	2000	--
Load side						
Switching current		A	1.8	1.5 (see derating diagram)	0.1	0.1
Short-time loading capacity		A	20	4	1	1
		ms	20	200	20	20
Contacts			1 NO, Triac	1 NO, transistor	1 NO, transistor	1 NO, transistor
Switching voltage[1] (operating range)	Effective AC 50/60 Hz	V	48 ... 264	--	--	--
	DC		--	≤ 60	≤ 30	≤ 30
Minimum load current		mA	60	--	--	--
Voltage drop conducting		V	≤ 1.5	≤ 1.1	≤ 1.7	≤ 0.3
Permissible residual current of the electronics (with 0 signal)		mA	< 5	< 0.1	< 0.1	< 0.001
Switching frequency at I_e		Hz	1	1	5	5

[1] Observe minimum switching voltage for 3TX7 002-3AB00.

Type		3TX7 004/3TX7 005
General data		
Rated insulation voltage U_i (degree of pollution 3)	V	300
Safe isolation according to EN 60947-1, Appendix N for optocouplers	V	Up to 300
Permissible ambient temperature		
• During operation	°C	-25 ... +60
• During storage	°C	-40 ... +80
Conductor cross-sections		
• Screw terminals (for 3TX7 004):		
- Solid	mm^2	1 x (0.25 ... 4)
- Finely stranded with end sleeve	mm^2	1 x (0.5 ... 2.5)
- Finely stranded without end sleeve	mm^2	1 x (0.5 ... 2.5)
- Terminal screws		M3
• Spring-loaded terminals (for 3TX7 005):		
- Solid or finely stranded	mm^2	1 x (0.08 ... 2.5)
- Finely stranded with end sleeve	mm^2	1 x (0.25 ... 1.5)

Type	3TX7 004-/3TX7 005-		3AB04	3AC.4	3AC03	3PB54	4PG24
Control side							
Operating ranges		V	11 ... 30 DC				110 ... 230 AC/DC
Power consumption							
	- at 24 V DC	W	≤ 0.5	≤ 0.5	≤ 0.25	≤ 0.2	--
	- at 230 V AC	W	--	--	--	--	≤ 1.5
Release voltage		V	6	5	6	9	20
Permissible residual current of the electronics (for 0 signal)		mA	2.3	2.6	1.5	1.5	0.4
Operating times							
	- ON-delay	ms	2.5	0.3	10	0.3	10
	- OFF-delay	ms	8	4	10	0.3	12
Function display			Yellow LED				
Max. permissible cable length (min. conductor cross-section: 0.75 mm^2)		m	1700	2000	2000	2000	40
Load side							
Switching voltage		V	10 ... 48 DC	10 ... 30 DC	24 ... 250 AC	10 ... 30 DC	10 ... 30 DC
Switching current		A	0.5	5	2	1.5	0.1
Short-time loading capacity							
		A	1.5	Short-circuit resistant[1]	100	Short-circuit resistant[2]	0.2
		ms	20	--	20	--	3
Contacts			1 NO, transistor		1 NO, Triac	1 NO, transistor	
Minimum load current		mA	--	500[3]	50	--	--
Voltage drop conducting		V	≤ 1	≤ 0.5	≤ 1.6	≤ 0.5	≤ 1.5
Leakage current of the electronics for 0 signal		mA	< 0.1	< 0.1	< 6	< 0.1	< 0.1
Switching frequency for resistive load		Hz	50	50	1	500	25

1) In the event of a short-circuit or overload, the semiconductor output switches off. In order to operate the device again, it must be temporarily disconnected from the power supply.

2) In the event of a short-circuit or overload, the current is limited by the semiconductor output.

3) If the current falls below the minimum load current, the built-in semiconductor detects an open-circuit in the load circuit. The control must be temporarily switched off for resetting.

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Type	3TX7 004-/3TX7 005-		3PB74	3PG74
Control side				
Operating range		V	11 ... 30 DC	88 ... 253 AC/DC
Power consumption				
	- at 24 V DC	W	0.2	--
	- at 230 V AC	W	--	≤ 1.5
Release voltage		V	6	25
Permissible residual current of the electronics (for 0 signal)		mA	1.2	1
Operating times				
	- ON-delay	ms	0.2	1.5
	- OFF-delay	ms	1.0	75
Function display			Yellow LED	
Max. permissible cable length (min. conductor cross-section: 0.75 mm^2)		m	2000	40
Load side				
Switching voltage max.		V	DC 30	
Switching current		A	3	
Short-time loading capacity		A	Short-circuit resistant[1]	
		ms	--	
Contacts			1 NO, transistor	
Minimum load current		mA	--	
Voltage drop conducting		V	≤ 0.5	
Leakage current of the electronics for 0 signal		mA	0.1	
Switching frequency for resistive load		1/s	10	

[1] In the event of a short-circuit or overload, the current is limited by the semiconductor output.