Coupling Relays with Narrow Type of Construction

Relay connectors

Technical specifications

Type			3TX7 002-/3TX7 003-
General data			
Rated insulation voltage U_i (pollution degree 3)		V	300
Safe isolation [1] between the coil and the contacts acc. to DIN VDE 0106 Part 101		V	up to AC 300 V
Degree of protection	Connections Enclosures		IP20 IP30
Short-circuit protection acc. to IEC 60947-5-1 (weld-free protection at $I_k \geq 1$ kA) Fuse-links, operational class gL/gG		A	4
Permissible ambient temperature	during operation during storage	°C °C	–25 ... +60 –40 ... +80
Conductor cross-sections			
• Screw-type connections			
- solid		mm^2	1 × (0.25 ... 4)
- finely stranded with or without end sleeve		mm^2	1 × (0.5 ... 2.5)
- terminal screw			M 3
• Spring-loaded terminals (for 3TX7 003):			
- solid or finely stranded		mm^2	1 × (0.08 ... 2.5)
- finely stranded with end sleeve		mm^2	1 × (0.25 ... 1.5)

1) For 3TX7 00.-1FB02, no safe isolation acc. to DIN VDE 0106 Part 101.

Type	3TX7 002-/3TX7 003-		1AB02	1AB00	1BB00 1FB02	1CB00	2AB00	2AE00	1BF00 2BF02	2AF00	2AF05
Control side											
• **Operating range**			0.8 ... 1.25 × U_s					0.8 ... 1.1 × U_s			
• **Power consumption at U_s**		W	0.75	0.75	0.75	1.2	0.75	0.75	1.2	1.2	1.2
• **Release voltage**		% of U_s	≥ 10								≥ 25
• **Max. permissible conductor length** (min. conductor 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 electronic circuit (for 0 signal)		mA	2	2	2	4	2	0.4	0.35	0.35	4
• **Switching times at U_s**	- ON-delay	ms	< 8								
	- OFF-delay	ms	< 10								
• **Function display**			yellow LED								
Load side											
Rated currents [2]											
• Conventional thermal current I_{th}		A	6								
• Rated operating currents I_e acc. to utilization categories (DIN VDE 0660) (3TX7 002-1CB00: AC-15, I_e = 2 A)											
- AC-15	- at 24 V	A	3								
	- at 110 V	A	3								
	- at 230 V	A	3								
- DC-13	- at 24 V	A	1.0								
	- at 110 V	A	0.2								
	- at 230 V	A	0.1								
• **Operating current** with resistive load to DIN VDE 0435 (relay standard) and DIN VDE 0660											
- AC-12	- at 24 V	A	6								
	- at 110 V	A	6								
	- at 230 V	A	6								
- DC-12	- at 24 V	A	6								
	- at 110 V	A	0.2								
	- at 230 V	A	0.2								
• **Operating voltage**	- AC/DC	V	24 ... 250								
• **Min. contact load for 3TX7 00.-...02**		mA	AC/DC 1 V, 0.1								
• **Mechanical endurance**		Oper. cycles	20×10^6								
• **Electrical endurance at I_e**		Oper. cycles	1×10^5								
• **Operating frequency**		Oper. cycles 1/h	5000								
• **Contact material for 3TX7 00.-...02**			Ag/Ni 0.15 hard gold-plated								
• **Power limit hard gold plating for 3TX7 00.-...02**											
- Voltage		V	30								
- Current		mA	20								

Note: If inductive loads are connected in parallel, the service life of the relay connectors can be increased.

1) No safe isolation for 3TX7 00.-1FB02

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

Type			3TX7 004/3TX7 005
General data			
Rated insulation voltage U_i (pollution degree 3)		V	300
Safe isolation between the coil and the contacts acc. to DIN VDE 0106 Part 101		AC V	up to 300
Degree of protection	Connections Enclosures		IP20 IP30
Short-circuit protection acc. to IEC 60947-5-1 (weld-free protection at $I_k \geq 1$ kA) fuse-links, operational class gL/gG		A	4
Permissible ambient temperature	during operation during storage	°C °C	–25 ... +60 –40 ... +80
Conductor cross-sections			
• Screw connections (for 3TX7 004):			
- solid		mm^2	1 × (0.25 ... 4)
- finely stranded with end sleeve		mm^2	1 × (0.5 ... 2.5)
- finely stranded without end sleeve		mm^2	1 × (0.5 ... 2.5)
- terminal screws			M 3
• Spring-loaded terminals (for 3TX7 005):			
- solid or finely stranded		mm^2	1 × (0.08 ... 2.5)
- finely stranded with end sleeve		mm^2	1 × (0.25 ... 1.5)
Control side			
• **Operating range**	at DC 17 ... 40 V at U_s = AC/DC 24 V at U_s = AC/DC 110 and 230 V		– 0.7 ... 1.25 × U_s 0.8 ... 1.1 × U_s
• **Power consumption at U_s**			approx. 0.5 W/channel; 3TX7 00.-...05: 1 W at DC/6 VA at AC
• **Permissible residual current** of the electronics (for 0 signal)			
	- Width 6.2 mm		
	- U_s = 24 V	mA	2
	- U_s > 24 V	mA	0.5
	- From 12.5 mm width	mA	2.5
	Exceptions: 3TX700.-1LH00,	mA	1.5
	3TX700.-1BF05	mA	5 (U_s = AC 230 V)
		mA	0.5 (U_s = AC 230 V)
• **Switching times at U_s**	- ON-delay	ms	< 8
	- OFF-delay	ms	< 15
• **Function display**			yellow LED

Type	3TX7 004/3TX7 005		-1.F00 -2ME02 -2MF02	-1.B.. -2MB02	1.H0.	-1BF05
Max. permissible conductor length (min. conductor cross-section: 0.75 mm^2)						
	• AC	m	40	400	on request	350
	• DC	m	2000	2000	on request	2000

Type			3TX7 00.-1A/1B-/1C/-1H/1G	3TX7 00.-.L/.M
Load side				
Rated operating currents I_e [1])				
• Conventional thermal current I_{th}		A	6	6
• Rated operating current I_e according to utilization categories (DIN VDE 0660)				
- AC-15	- at 24 V	A	3	2
	- at 110 V	A	3	2
	- at 230 V	A	3	2
- DC-13	- at 24 V	A	1	1
	- at 110 V	A	0.2	0.2
	- at 230 V	A	0.1	0.1
• **Operating current** with resistive load to DIN VDE 0435 (relay standard) and DIN VDE 0660				
- AC-12	- at 24 V	A	6	6
	- at 110 V	A	6	6
	- at 230 V	A	6	6
- DC-12	- at 24 V	A	6	6
	- at 110 V	A	0.3	0.3
	- at 230 V	A	0.2	0.2
• **Power limit/hard gold plating**	- Voltage	V	30	30
	- Current	mA	20	20
• **Operating voltage**	AC/DC	V	17 ... 250	17 ... 250
• **Endurance**	- mechanical	Operating cycles	20 × 10^6	20 x 10^6
	- electrical (at I_e)	Operating cycles	1 × 10^6	0.5 x 10^6
• **Operating frequency**		Operating cycles 1/h	5000	5000

Note: If inductive loads are connected in parallel, the service life of the relay connectors can be increased.

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