3TX7 Coupling Relays, Narrow Design

Relay couplers with plug-in design

Design

Coupling links are used to connect signals to and from a PLC. The plug-in relays enable the relay to be replaced at the end of its service life without detaching the wiring.

For easy linking of the signals, each terminal can be jumpered using an external connecting comb.

Technical specifications

Type			3TX7 01.-1
General data			
Rated insulation voltage U_i (degree of pollution 2)		V	300
Safe isolation between the coil and the contacts according to EN 60947-1, Appendix N		V	Up to 300 AC
Degree of protection	Enclosure Relays		IP20 IP40
Short-circuit protection according to IEC 60947-5-1 (weld-free protection at $I_k \geq 1$ kA) Fuse links, gL/gG operational class		A	4
Permissible ambient temperature	During operation During storage	°C °C	-25 ... +55 -40 ... +80
Conductor cross-sections screw terminals • Solid • Finely stranded with or without end sleeve • Terminal screw		 mm^2 mm^2	 1 x (0.5 ... 2.5) 1 x (0.5 ... 1.5) M2.5

Type			3TX7 01.-1.H	3TX7 01.-1.B	3TX7 01.-1.E	3TX7 01.-1.F
Control side						
Operating range			0.9 ... 1.1U_s	0.7 ... 1.25U_s	0.8 ... 1.1 Us	0.8 ... 1.1 U_s
Power consumption at U_s (24 V/115 V/230 V)		W	< 0.5/0.5/1			
Release voltage		%	10 of U_s			
Max. permissible cable length (min. conductor cross-section: 0.75 mm)						
	AC DC	m m	-- 2000	100 2000	70 800	40 800
Permissible residual current of the electronics (for 0 signal)		mA	1	2	0.3	0.3
Operating times at U_s						
	ON-delay OFF-delay	ms ms	< 6 < 6	< 7 < 7	< 8 < 20	< 8 < 20
Function display			Yellow LED			
Protection circuit						
	DC AC		Freewheel diode + Reverse polarity protection Rectifier bridge			

Type			3TX7 01.-1
Load side			
Rated currents[1]			
• Continuous thermal current I_{th}		A	5
• Rated operational currents I_e			
- AC-15	at 24 V at 110 V at 230 V	A A A	3 3 3
- DC-13	at 24 V at 110 V at 230 V	A A A	1 0.2 0.1
Switching voltage	AC/DC	V	24 ... 250
Min. contact load • Standard contact • Hard gold-plated contacts			 17 V DC/5 mA at 1 ppm fault[2] 5 V DC/1 mA at 1 ppm fault[2]
Mechanical endurance		Operating cycles	20 × 10^6
Electrical endurance at I_e according to AC-15		Operating cycles	100000
Switching frequency		Operating cycles 1/h	5000

Note: If inductive loads are connected in parallel, the endurance of the relay couplers can be increased.

[1] Capacitive loads can result in micro-weldings on the contacts.

[2] 1 ppm = one fault in the first one million operating cycles.