

Technical specifications

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									
Rated control supply voltage $U_s^{1)}$	V	24 DC	24 AC	115 AC	230 AC	24 DC	24 AC	115 AC	230 AC
Rated insulation voltage U_i	V	250				250			
Degree of pollution		3				3			
Overvoltage category		III				III			
Acc. to EN 60947-1, Appendix N									
Safe isolation		Up to 250 V (with plug-in base LZS:RT78726) No (for complete units with standard socket)				No			
Between the coil and the contacts acc. to EN 60947-1, Appendix N									
Degree of protection of relay/base		IP67/IP20				IP50/IP20			
Permissible ambient temperature									
• During operation	°C	-40 ... +70				-40 ... +70 (+50 for base assembly)			
• During storage	°C	-40 ... +80				-40 ... +80			
Conductor cross-sections									
• Solid									
- LZS:RT.A.../LZS:RT.B....	mm ²	2 x 2.5				2 x 2.5			
- LZS:RT.D....	mm ²	2 x 0.75 ... 1.5				2 x 0.75 ... 1.5			
• Finely stranded with or without end sleeve									
- LZS:PT.A.../LZS:PT.B....	mm ²	2 x 1.5				2 x 1.5			
- LZS:PT.D....	mm ²	2 x 0.75 ... 1.5/1.0				2 x 0.75 ... 1.5/1.0			
• Permissible opening tool		Screwdriver for slotted screws, 3.0 ... 3.5 mm x 0.5 mm							
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		0.4 W	0.75 VA	0.75 VA	0.75 VA	0.75 W	1 VA	1 VA	1 VA
Release voltage	V	2.4	7.2	34.5	69	3.6	7.2	34.5	69
Protection circuit		Freewheel diode for complete unit	No			Freewheel diode in LED module	No		
Max. permissible cable length at $U_s^{2)}$ (min. cross-section: 0.75 mm ²)	m	> 2000	30 (with LED), 20 (without LED)			> 2000	500	200	50
Load side									
Switching voltage									
• AC/DC	V	24 ... 250				24 ... 250			
Rated currents ³⁾									
• Continuous thermal current I_{th}	A	16/8 (1 CO/2 CO)				12/10/6 (2 CO/3 CO/4 CO)			
• Rated operational current I_o AC-15 acc. to utilization categories (EN 60947)	A	6/3				5/5/4			
• Rated operational current I_o DC-13 acc. to utilization categories (EN 60947)	A	2 at 24 V 0.27 at 230 V				5 at 24 V 0.5 at 230 V			
Short-circuit protection	A	10				6			
$I_k \geq 1$ kA acc. to IEC 60947-5-1 Fuse links gL/gZ operational class DIAZED									
Shock resistance	g/ms	10/11				9/11			
Half-sine acc. to IEC 60028-2-27									
Vibration resistance									
Floating sine acc. to IEC 60068-2-6; 30 ... 150 Hz									
• Opening the normally-closed contacts along the critical axis	g	5				Approx. 7			
• Closing the normally-open contacts	g	> 20				> 20			
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 mV/1 mA			
Mechanical endurance	Operating cycles	30 x 10 ⁶	10 x 10 ⁶			10 x 10 ⁶			
Electrical endurance (resistive load at 250 V AC)	Operating cycles	1 x 10 ⁵				1 x 10 ⁵			
Switching frequency (operating cycles)									
• Without load	1/min 1/h	1200 72000				600 36000			
• With load	1/min 1/h	6 360				6 360			
Make-time	ms	7				15			
Break-time	ms	3				10			
Bounce time	ms	2				5			
Contact material		AgNi 90/10							

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

²⁾ The max. cable length depends on the conductor capacity and the cable installation. It can be increased by means of parallel load on A1/A2.

³⁾ Capacitive loads can result in micro-weldings on the contacts.

LZS, LZX Plug-In Relays

Relay couplers

Relay type		MT industrial relay, 11-pole (35.5 mm) 3 CO			
AC and DC operation					
Rated control supply voltage $U_s^{1)}$	V	24 DC	24 AC	115 AC	230 AC
Rated insulation voltage U_i	V	250			
Degree of pollution		3			
Overvoltage category		III			
Acc. to EN 60664-1					
Safe isolation		No			
Between the coil and the contacts					
acc. to EN 60947-1, Appendix N					
Degree of protection of relay/base		IP50/IP20			
Permissible ambient temperature					
• During operation	°C	-45 ... +60	-45 ... +50	-45 ... +50	-45 ... +50
• During storage	°C	-45 ... +80	-45 ... +80	-45 ... +80	-45 ... +80
Conductor cross-sections					
• Screw terminals					
- solid	mm ²	2 x 2.5			
- finely stranded with or without end sleeve	mm ²	2 x 1.5			
- permissible 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 at U_s		1.2 W	2.3 VA	2.3 VA	2.3 VA
Release voltage	V	2.4	9.6	46	92
Protection circuit		No			
Max. permissible cable length at $U_s^{2)}$	m	> 2000	On request	On request	80
(min. cross-section: 0.75 mm ²)					
Load side					
Switching voltage					
• AC/DC	V	24 ... 250			
Rated currents ³⁾					
• Conventional thermal current I_{th}	A	10			
• Rated operational current I_a /DC-13	A	2 at 24 V			
acc. to utilization categories (EN 60947)		0.27 at 230 V			
• Rated operational current I_e /AC-15	A	5 at 24 V and 230 V			
acc. to utilization categories (EN 60947)					
Short-circuit protection	A	10			
$I_k \geq 1$ kA acc. to IEC 60947-5-1					
Fuse links gL/gZ operational class					
DIAZED					
Shock resistance	g/ms	13/11			
Half-sine acc. to IEC 60028-2-27					
Vibration resistance					
Floating sine acc. to IEC 60068-2-6					
30 ... 150 Hz					
• Opening the normally-closed contacts along the critical axis	g	2			
• Closing the normally-open contacts	g	> 20			
Min. contact load		12 V DC/10 mA			
(reliability: 1 ppm)					
Mechanical endurance	Oper- ating cycles	20 x 10 ⁶			
Electrical endurance	Oper- ating cycles	4 x 10 ⁵			
(resistive load at 250 V AC)					
Switching frequency (operating cycles)					
• Without load	1/min 1/h	100 6000			
• With load	1/min 1/h	20 1200			
Make-time	typ./ms	12			
Break-time	typ./ms	5			
Bounce time	typ./ms	4			
Contact material		AgNi 90/10			

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

2) The max. cable length depends on the conductor capacity and the cable installation. It can be increased by means of parallel load on A1/A2.

3) Capacitive loads can result in micro-weldings on the contacts.