

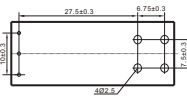
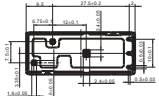
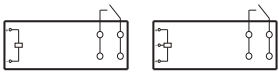





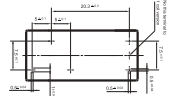
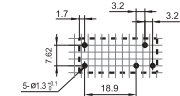
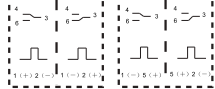
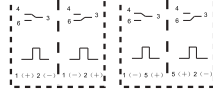


Type	FRL1	FRL1B
Appearance		
Dimensions: L x W x H (mm)	32.5 x 27.6 x 20.5	32.5 x 27.6 x 20.5
International Security Certificates	CE us: E139468	CE us: E139468
Coil Voltage (V)	DC5, 12, 24, 48	DC5, 12, 24, 48
Coil Power	0.9W, 2 x 1.8W	1.5W, 2 x 3.0W
Contact Material	AgSnO ₂	AgSnO ₂
Contact Arrangement	1A, 1B, 1C	1A, 1B, 1C
Contact transfer current (A)	40A	50A
Contact rating		Resistive Load : 50A 277VAC Incandescent Lamp: 3,000W 240VAC Electronic Ballast : 16A 280VAC Motor Load : 5HP 250VAC
Max. Switching Power	1,200W 12,000VA	1,500W 14,000VA
Max. Switching Voltage	110VDC 300VAC	110VDC 300VAC
Ambient temperature	-40°C ~ +85°C	-40°C ~ +85°C
Dielectric Strength	Between Contacts	50Hz 1,500VAC
	Between Contact and Coil	50Hz 2,500VAC (with pin 6) 50Hz 4,000VAC (without pin 6)
Insulation Resistance	1,000MΩ	1,000MΩ
Initial Contact Resistance	≤20mΩ	≤20mΩ
Electrical Life (Operations)	Resistive : 3 x 10 ⁴ Incandescent Lamp: 1 x 10 ⁵ Electronic Ballast : 6,000 Motor Load : 2 x 10 ⁴	Resistive : 5 x 10 ⁴ Incandescent Lamp: 3 x 10 ⁵ Electronic Ballast : 6,000 Motor Load : 3 x 10 ⁴
Mechanical Life (Operations)	1 x 10 ⁶	1 x 10 ⁶
Weight (Approx.)	28g	28g
Mounting Layout (Bottom View) (mm)		
Wiring Diagram (Bottom View)		
Cross Reference		

FRL1T	FRL1TB	FRL7
32.5 x 27.6 x 28.5 (20)	32.5 x 27.4 x 28.5(20)	60 x 40 x 22
CE us: E139468	CE us: E139468	
DC5, 12, 24, 48	DC5, 12, 24, 48	DC6, 12, 24
0.9W, 2 x 1.8W	1.5W, 2 x 3.0W	1 coil: 2.25W, 2 coil: 4.5W
AgSnO ₂	AgSnO ₂	AgSnO ₂
1A, 1B, 1C	1A, 1B, 1C	1A, 1B
40A	50A	100A
Resistive Load : 40A 277VAC Incandescent Lamp: 3,000W 240VAC Electronic Ballast : 5A 280VAC Motor Load : 2HP 250VAC	Resistive Load : 50A 277VAC Incandescent Lamp: 3,000W 240VAC Electronic Ballast : 16A 280VAC Motor Load : 5HP 250VAC	100A 240VAC
1,200W 12,000VA	1,500W 14,000VA	23,000VA
110VDC 300VAC	110VDC 300VAC	400VAC
-40°C ~ +85°C	-40°C ~ +85°C	-25°C ~ +70°C
50Hz 1,500VAC	50Hz 1,500VAC	50Hz 2,000VAC
50Hz 2,500VAC (with pin 6) 50Hz 4,000VAC (without pin 6)	50Hz 2,500VAC (with pin 6) 50Hz 4,000VAC (without pin 6)	50Hz 4,000VAC
1,000MΩ	1,000MΩ	1,000MΩ
≤20mΩ	≤20mΩ	≤30mΩ
Resistive : 3 x 10 ⁴ Incandescent Lamp: 1 x 10 ⁵ Electronic Ballast : 6,000 Motor Load : 2 x 10 ⁴	Resistive : 5 x 10 ⁴ Incandescent Lamp: 3 x 10 ⁵ Electronic Ballast : 6,000 Motor Load : 3 x 10 ⁴	1 x 10 ⁴
1 x 10 ⁶	1 x 10 ⁶	1 x 10 ⁶
28g	28g	82g
		Gruner: 720



Type	FRL10	FRL10N
Appearance		
Dimensions: L x W x H (mm)	39 x 15 x 29	39 x 15 x 25
International Security Certificates		CEus: E141516
Coil Voltage (V)	DC6, 12, 24	DC6, 9, 12, 24, 48
Coil Power	1.5W, 2 x 3.0W	1.5W, 2 x 3.0W
Contact Material	AgSnO ₂	AgSnO ₂
Contact Arrangement	1A	1A
Contact transfer current (A)	80A	50A
Contact rating	80A 277VAC	Resistive : 50A 277VAC Motor Load : 5HP 240VAC Incandescent Lamp: 5,000W 240VAC 16A 277VAC
Max. Switching Power	23,000VA	12,500VA
Max. Switching Voltage	350VAC	440VAC
Ambient temperature	-40°C ~ +70°C	-40°C ~ +70°C
Dielectric Strength	Between Contacts	50Hz 1,500VAC
	Between Contact and Coil	50Hz 4,000VAC
Insulation Resistance	1,000MΩ	1,000MΩ
Initial Contact Resistance	≤20mΩ	≤20mΩ
Electrical Life (Operations)	60A: 1 x 10 ⁶ 80A: 5 x 10 ⁶	1 x 10 ⁶
Mechanical Life (Operations)	5 x 10 ⁶	5 x 10 ⁶
Weight (Approx.)	30g	25g
Mounting Layout (Bottom View) (mm)		
Wiring Diagram (Bottom View)		
Cross Reference		Gruner :704L HongFa: HFE10

FRL20	FRL21	
		
29 x 13 x 15.7	28.6 x 10.1 x 12.6	
CEus: E141516		
DC3, 5, 6, 12, 24	DC3, 5, 12, 24	
1 coil: 0.4W, 2 coils: 0.6W	1 coil: 0.22W, 2 coils: 0.48W	
AgSnO ₂	AgCdO, AgSnO ₂	
1A, 1C	1A, 1C	
16A	10A	
Resistive : 16A 250VAC Motor Load : 1HP 240VAC Incandescent Lamp: 360W 125VAC(1A); TV-5 120VAC(1A)	10A 250VAC/24VDC	
4,000VA	240W 2,500VA	
440VAC	150VDC 400VAC	
-40°C ~ +85°C	-40°C ~ +85°C	
50Hz 1,000VAC	50Hz 1,000VAC	
50Hz 5,000VAC	50Hz 5,000VAC	
1,000MΩ	1,000MΩ	
≤50mΩ	≤100mΩ	
5 x 10 ⁴	5 x 10 ⁴	
2 x 10 ⁶	5 x 10 ⁶	
13g	8g	
		
		
TYCO : RTI Matsushita: DJ Fujitsu : FTR-KIL	Fujitsu: FTR-JSL	