

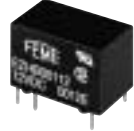
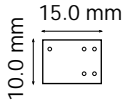
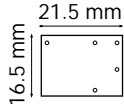
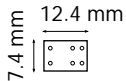



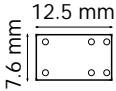
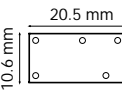
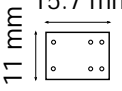


## Signal

	ESH	EMH	EZH
			
<b>Dimensions</b>	 Height 11.4 mm	 Height 14.4 mm	 Height 9.9 mm
<b>Contacts</b>	Configuration: 1 CO Material: AgNi - Au (optional): - Rated current: 3A Max. contact Voltage: 240 VAC Minimum permissible load (Typical value): 1mA - 80mVDC	Configuration: 1NO 1 CO Material: Silver Alloy (optional): - Rated current: 6A Max. contact Voltage: 300 VAC Minimum permissible load (Typical value): 10mA - 5 VDC	Configuration: 1 CO Material: AgNi - Au (optional): - Rated current: 1A Max. contact Voltage: 120 VAC Minimum permissible load (Typical value): 1mA - 10mVDC
<b>Coil</b>	Rated voltage: 3 to 24 VDC Operating range: 0.7 to 1.3 Un	Rated voltage: 3 to 48 VDC Operating range: 0.75 to 1.3 Un	Rated voltage: 3 to 12 VDC Operating range: 0.7 to 1.3 Un
<b>General data</b>	Electrical life (at max switching power): 1 x 10 <sup>5</sup> cycles Mechanical life: 1 x 10 <sup>7</sup> cycles Insulation test VAC (1min.): - coil / frame: - - contact / coil: 1000 VAC - contact / frame: - - open contacts: 500 VAC Contact different polarity: - Protection category: IP67 Working temperature: -25°C to + 55°C Pin lay out (mm): dual in line Approvals: UL, cUL	Electrical life (at max switching power): 10 <sup>5</sup> cycles Mechanical life: 1 x 10 <sup>7</sup> cycles Insulation test VAC (1min.): - coil / frame: - - contact / coil: 3000 VAC - contact / frame: - - open contacts: 750 VAC Contact different polarity: - Protection category: IP67 Working temperature: -55°C to + 90 °C Pin lay out (mm): - Approvals: UL, cUL, VDE	Electrical life (at max switching power): 1 x 10 <sup>5</sup> cycles Mechanical life: 2 x 10 <sup>7</sup> cycles Insulation test VAC (1min.): - coil / frame: - - contact / coil: 1000 VAC - contact / frame: - - open contacts: 400 VAC Contact different polarity: - Protection category: IP67 Working temperature: -25°C to + 55°C Pin lay out (mm): dual in line Approvals: UL, cUL
<b>Options</b>		-Extended temperature range version - 55 to 115°C available -Heavy duty 10A available	-




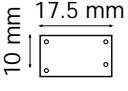
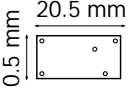
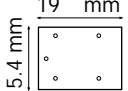
Detailed information on page

## Signal

	EZ..T	JF	VGH	
				
				
<b>Dimensions</b>	Height 10 mm	Height 15.3 mm	Height 12 mm	
<b>Contacts</b>	Configuration Material (optional) Rated current Max. contact Voltage Minimum permissible load (Typical value)	1 CO Silver alloy (Au clad) - 1A 125 VAC / 60 VDC 1mA - 10 mVDC	1 NO, 1 CO AgCdO - 5A 250 VAC 10mA - 5VDC	1 CO AgNi - Au - 2A 120 VAC / 60 VDC 1mA - 80 mVDC
<b>Coil</b>	Rated voltage DC Operating range	1.5 to 24 VDC 0.8 to 1.5 Un	3 to 24 VDC 0.7 to 1.3 Un	3 to 24 VDC 0.75 to 1,3 Un
<b>General data</b>	Electrical life (at max switching power)  Mechanical life  Insulation test VAC (1min.) - coil / frame - contact / coil - contact / frame - open contacts Contact different polarity Protection category Working temperature Pin lay out (mm)  Approvals	1 x 10 <sup>5</sup> cycles  2 x 10 <sup>7</sup> cycles  - 1000 VAC - 400 VAC - IP40/IP67 -30°C to + 70°C 3 MD  UL, cUL	10 <sup>5</sup> cycles  1 x 10 <sup>7</sup> cycles  - 4000 VAC - 1000 VAC - IP67 -40°C to + 70°C -  UL, CuI, VDE	10 <sup>5</sup> cycles  10 <sup>7</sup> cycles  - 1000 VAC - 400 VAC - IP67 -25°C to + 55°C DIL  UL, cUL
<b>Options</b>	-	-	-	

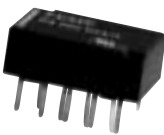

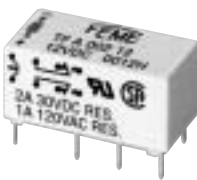

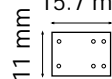
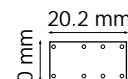
Detailed information on page

## Signal

	VK	VM	VTH
			
<b>Dimensions</b>	 Height 13 mm	 Height 20.5 mm	 Height 15.5 mm
<b>Contacts</b>	Configuration: 1 NO / 1 CO Material: AgNi (optional): - Rated current: 5A NO / 3A CO Max. contact Voltage: 250VAC/150VDC NO / 30VDC CO Minimum permissible load (Typical value): 100mA - 5VDC	Configuration: 1 NO / 1 CO Material: AgSnO (optional): - Rated current: 5A Max. contact Voltage: 250 VAC Minimum permissible load (Typical value): 100mA - 5VDC	Configuration: 1 CO Material: AgCdO (optional): AgSnO2 Rated current: 10A Max. contact Voltage: 250 VAC Minimum permissible load (Typical value): 100mA - 12VDC
<b>Coil</b>	Rated voltage: 3 to 24 VDC Operating range: 0.75 to 1.3 Un	Rated voltage: 3 to 48 VDC Operating range: 0.7 to 1.3 Un	Rated voltage: 3 to 48 VDC Operating range: 0.8 to 1.3 Un
<b>General data</b>	Electrical life (at max switching power): 10 <sup>5</sup> cycles Mechanical life: 5 x 10 <sup>6</sup> cycles Insulation test VAC (1min.): - coil / frame: - - contact / coil: 5000 VAC - contact / frame: - - open contacts: 750 VAC Contact different polarity: - Protection category: IP67 Working temperature: -40°C to +70°C Pin lay out (mm): dual in line Approvals: UL, cUL, VDE-	Electrical life (at max switching power): 10 <sup>5</sup> cycles Mechanical life: 10 <sup>7</sup> cycles Insulation test VAC (1min.): - coil / frame: - - contact / coil: 2000 VAC - contact / frame: - - open contacts: 1000 VAC Contact different polarity: - Protection category: IP67 Working temperature: -40°C to + 85°C Pin lay out (mm): - Approvals: UL, cUL, TUV-	Electrical life (at max switching power): 10 <sup>5</sup> cycles Mechanical life: 10 <sup>7</sup> cycles Insulation test VAC (1min.): - coil / frame: - - contact / coil: 1500 VAC - contact / frame: - - open contacts: 750 VAC Contact different polarity: - Protection category: IP67 Working temperature: -40°C to + 70°C Pin lay out (mm): - Approvals: UL, cUL, VDE
<b>Options</b>			

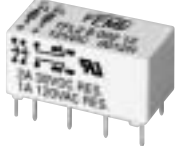


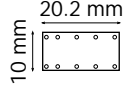
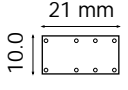
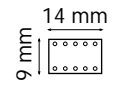
Detailed information on page

## Telecom

	P	PS	TF
			
			
<b>Dimensions</b>	Height 4,75 mm	Height 6,2 mm Including pins	Height 10.6 mm
<b>Contacts</b>	Configuration Material (optional) Rated current Max. contact Voltage Minimum permissible load (Typical value)	2 CO AgPd-Au - 1A 30 VDC / 0,5 / 125 VAC 250 VAC 100µA - 10mVDC	2 CO AgPd-Au - 1A 30 VDC / 0,5A 125 VAC 220 VDC / 250 VAC 2A 30 VDC / 1A 125 VAC 220 VDC / 250 VAC 10µA - 10mVDC
<b>Coil</b>	Rated voltage DC Operating range	3 to 204 VDC 0.75 to 2.0 Un Latching to 1.8 Un	3 to 24 VDC 0,75 to 2.0 Un Latching to 1.8 Un
<b>General data</b>	Electrical life (at max switching power)  Mechanical life  Insulation test VAC (1min.) - coil / frame - contact / coil - contact / frame - open contacts Contact different polarity Protection category Working temperature Pin lay out (mm)  Approvals	2x10 <sup>5</sup> cycles DC 1x10 <sup>5</sup> cycles AC  108 cycles  - 1000 VAC - 1000 VAC 1000 VAC IP67 -40°C to +70°C dual in line  UL, cUL	5 x 10 <sup>5</sup> cycles  1 x 10 <sup>8</sup> cycles  - 1000 Vrms - 1000 Vrms - IP67 -40°C to + 85°C DIL  UL, cUL
<b>Options</b>	Latching 1 and 2 coils -	Latching 1 and 2 coils	-


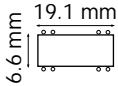
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## Telecom



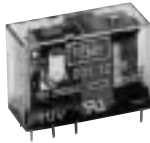
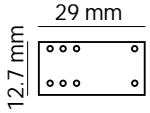
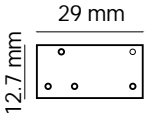
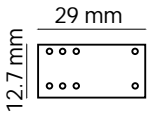
	TFL2	ZFHA	ZFHB
			
			
<b>Dimensions</b>	Height 10.6 mm	Width 10 mm	Height 12.2 mm
<b>Contacts</b>	Configuration Material (optional) Rated current Max. contact Voltage Minimum permissible load (Typical value)	2 CO AgPd60 Ag-AuAg8 - 2A 120 VAC 10µA - 10mVDC	2 CO Ag-Au - 1A 240 VAC 10µA - 10mVDC
<b>Coil</b>	Rated voltage DC Operating range	3 to 24 VDC Std. 5 to 24 VDC Sensitive	3 to 24 VDC 0.7 to 1.3 Un
<b>General data</b>	Electrical life (at max switching power)  Mechanical life  Insulation test VAC (1min.) - coil / frame - contact / coil - contact / frame - open contacts Contact different polarity Protection category Working temperature Pin lay out (mm)  Approvals	5 x 10 <sup>5</sup> cycles  1 x 10 <sup>8</sup> cycles  - 1500 Vrms - 1000 Vrms - IP67 -40°C to +80°C DIL  UL, cUL	1 x 10 <sup>5</sup> cycles  1 x 10 <sup>8</sup> cycles  - 500 VAC - 1000 VAC - IP67 30°C to +70°C dual in line  UL, cUL
<b>Options</b>	Sensitive type available		

Detailed information on page

## Reed




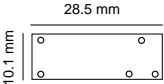
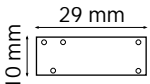
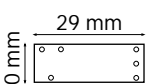
		<b>CM</b>	
			
			
<b>Dimensions</b>		Height 7 mm	
<b>Contacts</b>	Configuration Material (optional) Rated current Max. contact Voltage Minimum permissible load (Typical value)	1 NO, 1 CO, 2 NO Rhodium - 0.5 (0.25) A 200 VDC 100µA - 50µVDC	
<b>Coil</b>	Rated voltage DC Operating range	5 to 24 VDC 0.75 to 2.1 Un	
<b>General data</b>	Electrical life (at max switching power)  Mechanical life  Insulation test VAC (1min.) - coil / frame - contact / coil - contact / frame - open contacts Contact different polarity Protection category Working temperature Pin lay out (mm)  Approvals	5 x 10 <sup>6</sup> cycles  10 <sup>8</sup> cycles  - 500 VAC - 250 VDC - IP67 -40°C to +85°C+C19 dual in line  -	
<b>Options</b>		-Fw Diode -Shield	
<b>Detailed information on page</b>			

## Power

	LCA 5A	LCA 10A	LCA 16A
			
			
<b>Dimensions</b>	Width 12,7 mm	Width 12,7 mm	Width 12,7 mm
<b>Contacts</b>	Configuration Material (optional) Rated current Max. contact Voltage Minimum permissible load (Typical value)	Configuration Material (optional) Rated current Max. contact Voltage Minimum permissible load (Typical value)	Configuration Material (optional) Rated current Max. contact Voltage Minimum permissible load (Typical value)
<b>Coil</b>	Rated voltage Operating range Consumtion	Rated voltage Operating range Consumtion	Rated voltage Operating range Consumtion
<b>General data</b>	Electrical life (at max switching power) Mechanical life Insulation test VAC (1min.) - coil / frame - contact / coil - contact / frame - open contacts Contact different polarity Protection category Working temperature Pin lay out (mm)  Approvals	Electrical life (at max switching power) Mechanical life Insulation test VAC (1min.) - coil / frame - contact / coil - contact / frame - open contacts Contact different polarity Protection category Working temperature Pin lay out (mm)  Approvals	Electrical life (at max switching power) Mechanical life Insulation test VAC (1min.) - coil / frame - contact / coil - contact / frame - open contacts Contact different polarity Protection category Working temperature Pin lay out (mm)  Approvals
<b>Options</b>			




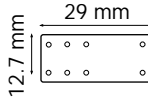
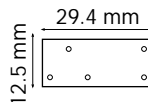
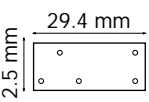
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## Power

	M12	M15 1 pole	M15 R1 / M15R2 Bistable 1 or 2 coils	
				
				
<b>Dimensions</b>	Width 10,4 mm	Height 15 mm	Height 15 mm	
<b>Contacts</b>	Configuration Material (optional) Rated current Max. contact Voltage Minimum permissible load (Typical value)	1 NO, 1 CO AgCdO12 AgCdO Au / AgSnO2 8A 250 VAC / 30 VDC 100 mA - 24 VDC	1 CO, 1 NO, 1 NC AgCdO AgNi / AgSnO2 8A 380VDC 100mA at 24VDC 10mA at 10mVDC (Au)	1 CO, 1 NO, 1 NC AgCdO AgNi / AgSnO2 8A 380VAC 100mA at 24VDC 10mA at 10mVDC (Au)
<b>Coil</b>	Rated voltage DC Operating range Consumption	5 to 60 VDC 0,75 to 2,3 Un Low coil power consumption 0,22 m to 0,29 m	3 to 110 VDC - 0.7 to 1.7 Vn Low coil power consumption ~100mW Vmin	3 to 48 VDC (M15 R1) 3 to 24 VDC (M15 R2) - see table
<b>General data</b>	Electrical life (at max switching power) Mechanical life Insulation test VAC (1min.) - coil / frame - contact / coil - contact / frame - open contacts Contact different polarity Protection category Working temperature Pin lay out (mm) Approvals	1 x 10 <sup>5</sup> ops 2 x 10 <sup>7</sup> ops 5000 VAC 1000 VAC IP67 -40°C to + 70°C 3.2 - 5 UL, cUL, VDE	10 <sup>5</sup> cycles 30 x 10 <sup>6</sup> cycles 4000 VAC 1000 VAC IP67 -40°C to + 70°C 2.5 - 3.2 - 3.5 - 5.0 UL, CSA, VDE, IMQ, S, N, D, F, SEV	10 <sup>5</sup> cycles 30 x 10 <sup>6</sup> cycles 4000 VAC 1000 VAC IP67 -40°C to + 70°C 2.5 - 3.2 - 3.5 - 5.0 UL, VDE
<b>Options</b>	Gold plated contacts	Gold plated contacts	Gold plated contacts	

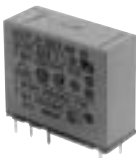

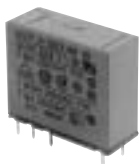
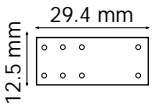
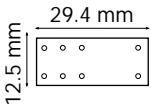
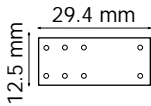
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## Power

	<b>M25</b> 1 pole 16A / 1 pole 12A 2 poles 8A	<b>MZ</b> 1 pole 5A	<b>MZ</b> 1 pole 10A
			
	 Pin View see data sheet		
<b>Dimensions</b>	Height 15.7 mm	Height 25.2 (26.5) mm	Height 25.2 (26.5) mm
<b>Contacts</b>	Configuration Material (optional) Rated current Max. contact Voltage Minimum permissible load (Typical value)	Configuration Material AgNi AgSnO2 5A 380VAC 100mA at 24VDC 10mA at 10mVDC (Au)	Configuration Material AgCdO AgNi / AgSnO2 10A 380VAC 100mA at 24VDC 10mA at 10mVDC (Au)
<b>Coil</b>	Rated voltage Operating range Consumption	DC AC 5 to 110 VDC 24 to 240 VAC AC 0.8 to 1.20 Un DC 0.7 to 1.7 Un ≤ 400 mW	DC AC 2.5 to 125 VDC 6 to 240 VAC 0.8 to 1.3 Un
<b>General data</b>	Electrical life (at max switching power) Mechanical life Insulation test VAC (1min.) - coil / frame - contact / coil - contact / frame - open contacts Contact different polarity Protection category Working temperature Pin lay out (mm)  Approvals	1 x 10 <sup>5</sup> cycles 1 x 10 <sup>7</sup> cycles - 750 VAC 5000 VAC 5000 VAC 1000 VAC 2500 VAC (1 Pole) IP67 -40°C to + 85°C 3.5 - 5  CUL, UL, VDE	3.5 x 10 <sup>5</sup> cycles 50 x 10 <sup>6</sup> cycles - 750 VAC 5000 VAC 5000 VAC 1000 VAC - IP40 / IP67 -40°C to + 70°C 3.5 - 5.0  UL, CSA, VDE, IMQ
<b>Options</b>	AgSnO2	"ia" version (PTB approval) Gold plated contacts Electronic Lamp Load (Special version see pag. )	"ia" version (PTB approval) Gold plated contacts Electronic Lamp Load (Special version see pag. )




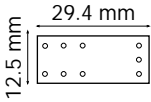
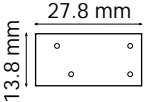
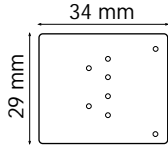
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## Power

	MZ 1 pole 16A	MZ 2 poles 5A	MZ 2 poles 10A	
				
				
<b>Dimensions</b>	Height 25.2 (26.5) mm	Height 25.2 (26.5) mm	Height 25.2 (26.5) mm	
<b>Contacts</b>	Configuration Material (optional) Rated current Max. contact Voltage Minimum permissible load (Typical value)	1 CO, 1 NO, 1 NC AgCdO AgNi / AgSnO2 16A 380VAC 100mA at 24VDC 10mA at 10mVDC (Au)	2 CO, 2 NO, 2 NC AgCdO AgNi / AgSnO2 5A 380VAC 100mA at 24VDC 10mA at 10mVDC (Au)	2 CO, 2 NO, 2 NC AgCdO AgNi / AgSnO2 10A 380VAC 100mA at 24VDC 10mA at 10mVDC (Au)
<b>Coil</b>	Rated voltage DC  Operating range	2.5 to 125 VDC 6 to 240 VAC 0.65 to 1.3 Un	2.6 to 132 VDC 6 to 240 VAC 0.8 to 1.3 Un	2.6 to 132 VDC 6 to 240 VAC 0.8 to 1.3 Un
<b>General data</b>	Electrical life (at max switching power) Mechanical life Insulation test VAC (1min.) - coil / frame - contact / coil - contact / frame - open contacts Contact different polarity Protection category Working temperature Pin lay out (mm) Approvals	1.5 x 10 <sup>5</sup> cycles  50 x 10 <sup>6</sup> cycles  750 VAC 5000 VAC 5000 VAC 1000 VAC - IP40 / IP67 -40°C to + 70°C 5.0 UL, CSA, VDE, IMQ	2.5 x 10 <sup>5</sup> cycles  50 x 10 <sup>6</sup> cycles  750 VAC 5000 VAC 5000 VAC 1000 VAC 4000 VAC IP40 / IP67 -40°C to + 70°C 5.0 UL, CSA, VDE, IMQ	8 x 10 <sup>4</sup> cycles  50 x 10 <sup>6</sup> cycles  750 VAC 5000 VAC 5000 VAC 1000 VAC 4000 VAC IP40 / IP67 -40°C to + 70°C 5.0 UL, CSA, VDE, IMQ
<b>Options</b>	"ia" version (PTB approval) 2500 VAC open contacts Work t 125°C (UL approval) Gold plated contacts Electronic Lamp Load (Special version see pag. )	"ia" version (PTB approval) 1.5/ 3 mm. double break Work t 125°C (UL approval) Gold plated contacts Electronic Lamp Load (Special version see pag. )	"ia" version (PTB approval) 1.5/ 3 mm. double break Work t 125°C (UL approval) Gold plated contacts Electronic Lamp Load (Special version see pag. )	

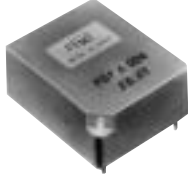
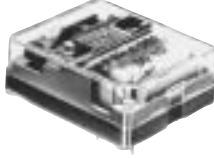
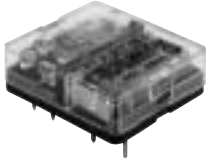
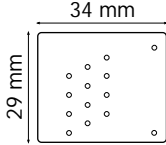
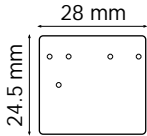
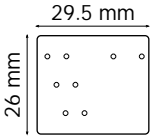
Detailed information on page

## Power

	<b>MZ R1/R2</b> 1 pole 16A	<b>MX</b> 1 pole 5A	<b>FG</b> 1 pole 10A
			
<b>Dimensions</b>	 Height 25.2 (26.5) mm	 Height 25.2 mm	 Height 10.9 mm
<b>Contacts</b>	Configuration: 1 contact, 2 contacts Material: AgCdO (optional): AgSnO2 Rated current: 5A / 10A / 16A Max. contact Voltage: 380VAC Minimum permissible load (Typical value): 100mA at 24VDC, 10mA at 10mVDC (Au)	Configuration: 1 NO, 1 NC Material: AgCdO (optional): - Rated current: 5A / 10A Max. contact Voltage: 380VAC Minimum permissible load (Typical value): 100mA at 24VDC, 10mA at 10mVDC (Au)	Configuration: 2 CO Material: AgCdO (optional): - Rated current: 5A Max. contact Voltage: 380VAC Minimum permissible load (Typical value): 100mA at 24VDC, 10mA at 10mVDC (Au)
<b>Coil</b>	Rated voltage: DC 2.5 to 260 VDC, AC 2.5 to 260 VAC Operating range: see table	Rated voltage: 1.5 to 102 VDC Operating range: 0.75 to 1.7 Un	Rated voltage: 3.7 to 142 VDC Operating range: 0.75 to 1.3 Un
<b>General data</b>	Electrical life (at max switching power): $8 \times 10^4$ - $3.5 \times 10^5$ cycles Mechanical life: $50 \times 10^6$ cycles Insulation test VAC (1min.): - coil / frame: 750 VAC - contact / coil: 5000 VAC - contact / frame: 5000 VAC - open contacts: 1000 VAC Contact different polarity: 4000 VAC Protection category: IP40 / IP67 Working temperature: -40°C to + 70°C Pin lay out (mm): 3.5 - 5.0 Approvals: see doc. 3.84.00.10.x	Electrical life (at max switching power): $2.5 \times 10^5$ cycles Mechanical life: $50 \times 10^6$ cycles Insulation test VAC (1min.): - coil / frame: 750 VAC - contact / coil: 5000 VAC - contact / frame: 5000 VAC - open contacts: 1000 VAC Contact different polarity: - Protection category: IP40 / IP67 Working temperature: -40°C to + 70°C Pin lay out (mm): 3.4 Approvals: UL, CSA, VDE, IMQ	Electrical life (at max switching power): $10^5$ cycles Mechanical life: $2 \times 10^7$ cycles Insulation test VAC (1min.): - coil / frame: 750 VAC - contact / coil: 2500 VAC - contact / frame: 2500 VAC - open contacts: 750 VAC Contact different polarity: 2500 VAC Protection category: IP40 / IP67 Working temperature: -40°C to + 70°C Pin lay out (mm): flat Approvals: UL, CSA
<b>Options</b>	"ia" version (PTB approval) Gold plated contacts	Gold plated contacts	Gold plated contacts


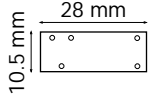
Detailed Information on page

## Power

	<b>FG</b> 4 poles 1A	<b>FT</b> 1 pole 10A	<b>FT</b> 2 poles 1A
			
<b>Dimensions</b>	 Height 10.9 mm	 Height 10.5 mm	 Height 10.9 mm
<b>Contacts</b>	Configuration: 4 CO Material: AgCdO (optional): - Rated current: 1A Max. contact Voltage: 380VAC Minimum permissible load (Typical value): 100mA at 24VDC, 10mA at 10mVDC (Au)	Configuration: 1 NO, 1 CO Material: AgCdO (optional): - Rated current: 10A Max. contact Voltage: 380VAC Minimum permissible load (Typical value): 100mA at 24VDC, 10mA at 10mVDC (Au)	Configuration: 2 CO Material: AgCdO (optional): - Rated current: 1A Max. contact Voltage: 380VAC Minimum permissible load (Typical value): 100mA at 24VDC, 10mA at 10mVDC (Au)
<b>Coil</b>	Rated voltage: DC 3.7 to 142 VDC, AC - Operating range: 0.75 to 1.3 Un	Rated voltage: DC 4.8 to 126 VDC, AC - Operating range: 0.7 to 1.25 Un	Rated voltage: DC 4.9 to 130 VCC, AC - Operating range: 0.75 to 1.2 Un
<b>General data</b>	Electrical life (at max switching power): 10 <sup>5</sup> cycles Mechanical life: 2 x 10 <sup>7</sup> cycles Insulation test VAC (1min.): - coil / frame: 750 VAC - contact / coil: 2000 VAC - contact / frame: 2000 VAC - open contacts: 750 VAC Contact different polarity: 1500 VAC Protection category: IP40 / IP67 Working temperature: -40°C to + 70°C Pin lay out (mm): flat Approvals: -	Electrical life (at max switching power): 10 <sup>5</sup> cycles Mechanical life: 2 x 10 <sup>7</sup> cycles Insulation test VAC (1min.): - coil / frame: 750 VAC - contact / coil: 4000 VAC - contact / frame: 4000 VAC - open contacts: 750 VAC Contact different polarity: - Protection category: IP40 / IP67 Working temperature: -40°C to + 70°C Pin lay out (mm): flat Approvals: UL, CSA, VDE	Electrical life (at max switching power): 10 <sup>5</sup> cycles Mechanical life: 2 x 10 <sup>7</sup> cycles Insulation test VAC (1min.): - coil / frame: 750 VAC - contact / coil: 2000 VAC - contact / frame: 2000 VAC - open contacts: 750 VAC Contact different polarity: 1500 VAC Protection category: IP40 / IP67 Working temperature: -40°C to + 70°C Pin lay out (mm): flat Approvals: -
<b>Options</b>	Gold plated contacts Bifurcated contacts	Gold plated contacts	Gold plated contacts Bifurcated contacts




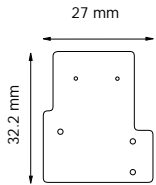
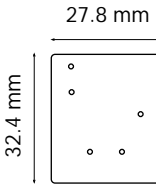
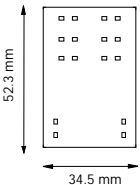
Detailed information on page

## Power

	<p><b>FV</b> 1 pole 10A</p> 		
			
<b>Dimensions</b>	Height 25.5 mm		
<b>Contacts</b>	<p>Configuration 1 NO, 1 CO Material AgCdO (optional) - Rated current 10A Max. contact Voltage 380VAC Minimum permissible load (Typical value) 100mA at 24VDC 10mA at 10mVDC (Au)</p>		
<b>Coil</b>	<p>Rated voltage DC 4.8 to 126 VDC AC - Operating range 0.7 to 1.25 Un</p>		
<b>General data</b>	<p>Electrical life (at max switching power) 10<sup>5</sup> cycles Mechanical life 2 x 10<sup>7</sup> cycles Insulation test VAC (1min.) - coil / frame 750 VAC - contact / coil 4000 VAC - contact / frame 4000 VAC - open contacts 750 VAC Contact different polarity - Protection category IP40 / IP67 Working temperature -40°C to + 70°C Pin lay out (mm) 2.5 Approvals UL, CSA, VDE</p>		
<b>Options</b>	Gold plated contacts		


Detailed information on page

## High Power output

	CGQ 1 pole 16A	CGQF430 1 pole 5A	CS30 / CF30 1 pole 10A	
				
<b>Dimensions</b>	 Width 20 / 27 mm	 Height 27.8 mm	 Height 30.48 mm Height 26.42 mm	
<b>Contacts</b>	Configuration Material (optional) Rated current Max. contact Voltage Minimum permissible load (Typical value)	1 NO, 1 CO Silver alloy - NO 30A / CO 20A 277 VAC / 28 VDC -	1 NO, 1 CO - NO 25A / CO = 20A 250 VAC / 30 VDC -	2 NO, 2 CO AgCdO 30A 277 VAC / 30 VDC
<b>Coil</b>	Rated voltage DC AC Operating range	5 to 110 VDC 12 to 277 VAC 0.1 to 1.3 Un	3 to 110 VDC 12 to 277 VAC 0.75 to 1.3 Un	6 to 110 VDC 24 to 277 VAC 0.8 to 1.1 Un
<b>General data</b>	Electrical life (at max switching power) Mechanical life Insulation test VAC (1min.) - coil / frame - contact / coil - contact / frame - open contacts Contact different polarity Protection category Working temperature Pin lay out (mm) Approvals	1 x 10 <sup>5</sup> ops 1 x 10 <sup>7</sup> ops - 2500 VAC (T-Version 4000 VAC) - 1500 VAC IP67 -55°C to + 85°C - UL, cUL	1 x 10 <sup>5</sup> ops 1 x 10 <sup>7</sup> ops 1500VAC (2500VAC AC version only) 1500 VAC IP 67 -40° to + 70° C * QC terminals UL, cUL, TUV	1 x 10 <sup>5</sup> ops 5 x 10 <sup>6</sup> ops 4000 Vrms 1500 Vrms 2000 Vrms IP67 AC -40 to + 65°C DC -40 to + 85°C UL, cUL, VDE
<b>Options</b>	T version without pin 6, with 4000 VAC of dielectric strenght between coil and contacts.	* extended thermal range available DC from -55 to +105°C AC from -55 to +85°C		

Detailed information on page

## High Power Output




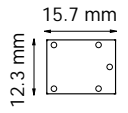
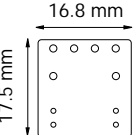
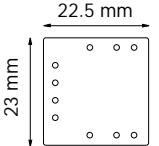
	MHR-PM	NA / NF / NP	
			
	Pin view see data sheets	Pin view see data sheets	
<b>Dimensions</b>	Height 27,8 mm	Height 36 mm	
<b>Contacts</b> Configuration Material (optional) Rated current Max. contact Voltage Minimum permissible load (Typical value)	1 NO, 1 CO Silver Alloy AgCdO NO 30A / 20A CO 277 VAC / 28 VDC -	1 NO, 2 NO Silver Alloy  30A / 25A 277 VAC / 28 VDC - -	
<b>Coil</b> Rated voltage DC AC Operating range	5 to 110 VDC 12 to 277 VAC 0.75 to 1.3 Un	3 to 200 VDC 6 to 220 VAC 0.1 to 1,1 Un	
<b>General data</b> Electrical life (at max switching power) Mechanical life Insulation test VAC (1min.) - coil / frame - contact / coil - contact / frame - open contacts Contact different polarity Protection category Working temperature Pin lay out (mm)  Approvals	1 x 105 ops  1 x 107 ops  2500 VAC  1500 VAC  IP67 -55°C to + 85°C QC terminals  UL, cUL	1 x 105 ops  1 x 107 ops  - 4000 VAC - 2000 VAC 2000 VAC  -25°C to + 60°C -  UL, cUL	
<b>Options</b>	Extended temperature range available. DC -55°C to 105°C AC -55°C to 85°C	Possibility of mixing between installation type and termination	

Detailed information on page

# Automotive Relays


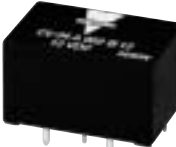

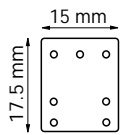
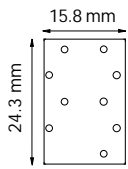
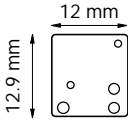
CARLO GAVAZZI

## Automotive

	CV 20	CV 21	CV 22	
				
				
<b>Dimensions</b>	Width 12,3 mm	Height 13.2 mm	Height 20.4 mm	
<b>Contacts</b>	Configuration Material (optional) Rated current Max. contact Voltage Minimum permissible load (Typical value)	1 CO, 1 Double make AgNi AgSnO <sub>2</sub> , Silver alloy 20A 16 VDC 100mA - 12 VDC	1 CO, 2 CO (Independent) AgNiO AgSnOInO 30A 20 VDC 20 VDC 100mA - 12 VDC	2 CO AgNi AgSnO 20A 14 VDC
<b>Coil</b>	Rated voltage DC AC Operating range	6 to 24 VDC - 0.65 to 1.3 Un	6 to 24 VDC Ind Coils - 0.5 to 2.1 Un	12 VDC -
<b>General data</b>	Electrical life (at max switching power) Mechanical life Insulation test VAC (1min.) - coil / frame - contact / coil - contact / frame - open contacts Contact different polarity Protection category Working temperature Pin lay out (mm) Approvals	1 x 10 <sup>5</sup> ops 1 x 10 <sup>7</sup> ops 500 VAC 500 VAC - IP67 -40°C to + 85°C 5 -	2 x 10 <sup>5</sup> ops 1 x 10 <sup>7</sup> ops 500 VAC 500 VAC - IP67 -40°C to + 85°C -	2 x 10 <sup>5</sup> ops 1 x 10 <sup>7</sup> ops 500 VAC 500 VAC - - -40°C to + 85°C -
<b>Options</b>		Version 001 available (see datasheets)		

Detailed information on page

## Automotive


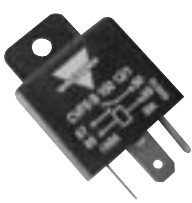
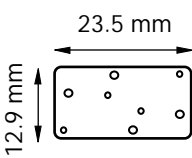
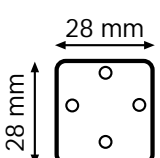
	CV 23-0 / CV 23-1	CV 24 / CV 25	CV 26
			
			
<b>Dimensions</b>	Width 13,2 mm    Width 15,2 mm	Width 15,8 mm	Height 9.9 mm
<b>Contacts</b> Configuration	1 NO, 1 NC, 1 CO, 1 double NO, 1 double NC, 1 double CO	2 CO (Independent)	1 NO, 1 CO
Material (optional)	AgNiO AgSnOInO	AgNiO AgSnOInO	AgNiO.15 AgSnOInO
Rated current	A=15 B=10 C=10	35A,10' - 25A,1h	30A NO - 25A NC
Max. contact Voltage	12 VDC	16 VDC	16 VDC
Minimum permissible load (Typical value)	500mA - 5 VDC	100mA - 5 VDC	500mA - 12 VDC
<b>Coil</b> Rated voltage	DC 6 to 24 VDC	Two coils - 6 to 24 VDC	6 to 24 VDC
AC	-	-	-
Operating range	0.7 to 1.3 Un	0.6 to 1.3 Un	0.6 to 2.2 Un
Consumption			
<b>General data</b> Electrical life (at max switching power)	2 x 10 <sup>5</sup> ops	10 <sup>5</sup> ops	10 <sup>5</sup> ops
Mechanical life	1 x 10 <sup>7</sup> ops	10 <sup>7</sup> ops	10 <sup>7</sup> ops
Insulation test VAC (1min.)			
- coil / frame	500 Vrms	500 Vrms	500 Vrms
- contact / coil			
- contact / frame	500 Vrms	500 Vrms	500 Vrms
- open contacts			
Contact different polarity	-	-	-
Protection category	IP00 - IP67	IP67	IP67
Working temperature	-40°C to + 85°C	-40°C to + 70°C	-40°C to +105 °C Operating -40°C to +155 °C Storage
Pin lay out (mm)			
Approvals	-	-	-
<b>Options</b>	Available in sealed or open frame enclosure. Other versions (see datasheets)	Two independents Relays in one enclosure 24 with gap standard 25 with gap increased Contact gap	

Detailed information on page

# Automotive Relays




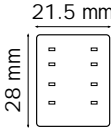
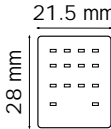
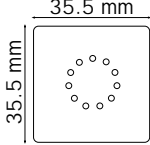


## Automotive

	CV 27	CV 28	CVF
			
<b>Dimensions</b>	Height 21 mm	 Width 12,9 mm	 Height 25 mm
<b>Contacts</b>	Configuration 1 NO, 1 CO Material AgSnO (optional) - Rated current 40A (high inrush 100A) Max. contact Voltage 30 VDC Minimum permissible load (Typical value) NO 40A, CO 30A	2 NO, 2 CO (Independent relays) AgNiO,15 AgSnOInO 25A-NC / 30A-NO 16 VDC -	1 NO, 1 CO Silver Alloy - 30A / 60A / 80A Current dependant 100mA / 500mA - 12 VDC
<b>Coil</b>	Rated voltage DC 3 to 24 VDC AC - Operating range 0.1 to 1,3 Un	6 to 12 VDC - 0.6 to 2 Un	6 to 24 VDC - 0.6 to 1.7 Un
<b>General data</b>	Electrical life (at max switching power) 1 x 10 <sup>5</sup> ops Mechanical life 1 x 10 <sup>7</sup> ops Insulation test VAC (1min.) - coil / frame 750 VAC - contact / coil 500 VAC - contact / frame 500 VAC - open contacts - Contact different polarity IP00 / IP67 Protection category -40°C to +70°C Working temperature - Pin lay out (mm) - Approvals -	1 x 10 <sup>5</sup> ops 107ops 500 Vrms 500 Vrms - IP67 -40°C to +105 °C Operating -40°C to +155 °C Storage -	2 x 10 <sup>5</sup> ops 107ops 500 Vrms 500 Vrms - IP67 -40°C to +125 °C Operating -40°C to +155 °C Storage QC Terminals -
<b>Options</b>	Sealed package or open range	AgSnOInO Contacts two independent relays in one single enclosure	Parallel diode and resistor available. Metal mounting crocket straight, 90° ot completely moulded

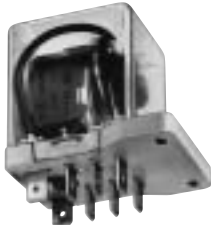


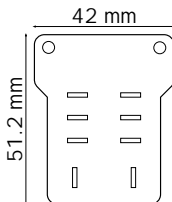
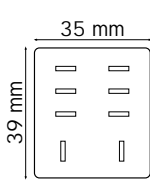
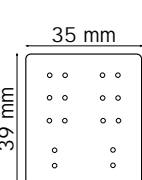
Detailed information on page

## Industrial

	RMI 2-10	RMI 4-5	RCP	
				
				
<b>Dimensions</b>	Height 36	Height 36	Height 56	
<b>Type</b>	RMI 2-10	RMI 4-5	RCP	
<b>Contacts</b>	Configuration Material Rated current Max. switching power AC Max. contact voltage Minimum permissible	2 CO Silver alloy - 10A 300 W - 2500 VA 250 VAC / 30 VDC -	4 CO Silver alloy - 5A 150 W - 1250 VA 250 VAC / 30 VDC -	2 CO, 3 CO Silver alloy - 10A 280 W - 2500 VA 380 VAC 100mA at 24VDC
<b>Coil</b>	Rated voltage DC AC Consumption DC AC Operating range	5 to 110 VDC 6 to 230 VAC - - -	5 to 110 VDC 6 to 230 VAC - - -	6 to 110 VDC 6 to 240 VAC 1.5 W 2.7 VA 0,1 to 1,2 Un
<b>General</b>	Electrical life (at max. switching power) Mechanical life Led, Flag and push botton Insulation test VAC (1min) -between contacts sets -coil / frame -contact / coil -contact / frame -open contacts -contact different polarity Protection category Operating temperture Terminal shape  Approvals	1 x 10 <sup>5</sup> ops (1800 ops/h) 1 x 10 <sup>7</sup> ops (18000 ops/h) Included 1500 VAC - 1000 VAC - 1000 VAC - 1000 VAC - IP 40 -55°C to + 70°C PCB and AMP  UL, CSA, IMQ, TUV	1 x 10 <sup>5</sup> ops (1800 ops/h) 1 x 10 <sup>7</sup> ops (18000 ops/h) Included 1500 VAC - 1000 VAC - 1000 VAC - IP 40 -55°C to + 70°C PCB and AMP  UL, CSA, IMQ, TUV	1 x 10 <sup>5</sup> 1 x 10 <sup>7</sup> Included - - 1500 Vr.m.s - 1000 Vr.m.s - IP 40 -40°C to + 55°C Plug-in (Octal, Undecal)  UL, cUL, IMQ, TUV
<b>Options</b>	Au-clad contact No led, no flag, no push botton, fw diode	Au-clad contact No led, no flag, no push botton, fw diode	No led, no flag, no push botton, fw diode-	

Detailed information on page

## Industrial

	REP		REPM		REPN	
						
						
<b>Dimensions</b>	Height 47.5		Height 47.5		Height 47.5	
<b>Type</b>	REP	REP-4KV 8mm	REPM	REPM-4KV 8mm	REPN	REPN-4KV 8mm
<b>Contacts Configuration</b>	2 CO, 2 NO   2NO		2 CO, 2 NO   2NO		2 CO, 2 NO   2NO	
<b>Material</b>	AgCdO		AgCdO		AgCdO	
<b>Rated current</b>	16A		16A		16A	
<b>Max. switching power AC</b>	4000VA		4000VA		4000VA	
<b>Max. contact voltage</b>	380 VAC		380 VAC		380 VAC	
<b>Minimum permissible</b>	100mA at 24VDC		100mA at 24VDC		100mA at 24VDC	
<b>Coil</b>	<b>Rated voltage</b>	DC 6 to 110 VDC	DC 6 to 110 VDC	DC 6 to 110 VDC	DC 6 to 110 VDC	DC 6 to 110 VDC
	AC	6 to 240 VAC   -	6 to 240 VAC   -	6 to 240 VAC   -	6 to 240 VAC   -	6 to 240 VAC   -
	<b>Consumption</b>	DC 1.3W   2.1 W	DC 1.3W   2.1 W	DC 1.3W   2.1 W	DC 1.3W   2.1 W	DC 1.3W   2.1 W
	AC	2.5 VA   -	2.5 VA   -	2.5 VA   -	2.5 VA   -	2.5 VA   -
	<b>Operating range</b>	0.85 to 1.1 Un   0.8 to 1.1 Un	0.85 to 1.1 Un   0.8 to 1.1 Un	0.85 to 1.1 Un   0.8 to 1.1 Un	0.85 to 1.1 Un   0.8 to 1.1 Un	0.85 to 1.1 Un   0.8 to 1.1 Un
<b>General data</b>	<b>Electrical life (at max. switching power)</b>	10 <sup>5</sup> cycles	10 <sup>5</sup> cycles	10 <sup>5</sup> cycles	10 <sup>5</sup> cycles	10 <sup>5</sup> cycles
	<b>Mechanical life</b>	10 <sup>7</sup> (002)   10 <sup>6</sup> cycles	10 <sup>7</sup> (002)   10 <sup>6</sup> cycles	10 <sup>7</sup> (002)   10 <sup>6</sup> cycles	10 <sup>7</sup> (002)   10 <sup>6</sup> cycles	10 <sup>7</sup> (002)   10 <sup>6</sup> cycles
	<b>Insulation test VAC (1min)</b>	10 <sup>6</sup> (200) cycles	10 <sup>6</sup> (200) cycles	10 <sup>6</sup> (200) cycles	10 <sup>6</sup> (200) cycles	10 <sup>6</sup> (200) cycles
	-between contacts sets	2000 VAC	2000 VAC	2000 VAC	2000 VAC	2000 VAC
	-coil / frame	2500 VAC   4000 VAC	2500 VAC   4000 VAC	2500 VAC   4000 VAC	2500 VAC   4000 VAC	2500 VAC   4000 VAC
	-contact / coil	2000 VAC	2000 VAC	2000 VAC	2000 VAC	2000 VAC
	-contact / frame	2500VAC	2500VAC	2500VAC	2500VAC	2500VAC
	-open contacts	IP40	IP40	IP40	IP40	IP40
	-contact different polarity	-10°C to +55°C	-10°C to +55°C	-10°C to +55°C	-10°C to +55°C	-10°C to +55°C
	<b>Protection category</b>	Fast-on (6.3 x 0.8)	Fast-on (6.3 x 0.8)	Fast-on (6.3 x 0.8)	Fast-on (6.3 x 0.8)	PCB
	<b>Operating temperature</b>					
	<b>Terminal shape</b>					
	<b>Approvals</b>	VDE	VDE	VDE	VDE	VDE
<b>Options</b>	+70°C version Mounting flange standard		+70°C version		+70°C version Mounting flange standard	

Detailed information on page