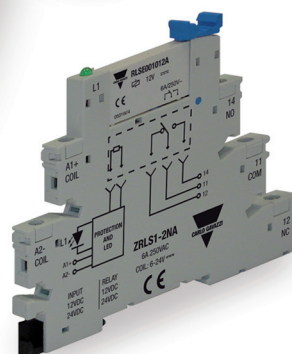
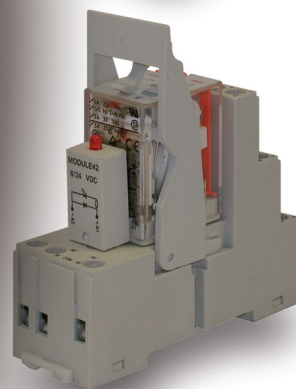
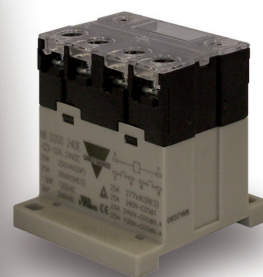


Industrial Relays and Sockets



Industrial Relays and Sockets

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Industrial Relays Overview

CARLO GAVAZZI

Types

RCP8 / RCP11



Dimensions	H x W x D mm H x W x D inches	56 x 35.5 x 35.5 2.20" x 1.40" x 1.40"
Terminal types	Plug-in	
No. of Contacts	2 Change-over (octal) 3 change-over (undecal)	
Contact rating	10A	
Features standard with:	Test button/Flag/LED	
Output Specifications		
Max. load AC1	10A / 250VAC	
Min. load	5mA / 12VDC	
Electrical life	> 100.000 cycles	
Switching power	2500VA (resistive)	
General Specifications		
Voltage ranges VDC	6 - 12 - 24 - 48 - 60 100 - 110	
Voltage ranges VAC	6 - 12 - 24 - 48 115/120 - 230	
Insulation according to	EN 61810-5	
Consumption	1.5W DC-2.5 VA AC	
Approvals/Conformity	CE,TUV,UR,CSA,IMQ,RINA	
References		
On page	12	

RMI 2-10 (2 Poles)



Dimensions	36 x 21.5 x 28 1.42" x 0.85" x 1.10"	
Terminal types	Plug-in - PCB	
No. of Contacts	2 Change-over	
Contact rating	10A	
Features standard with:	Test button/Flag/LED	
Output Specifications		
Max. load AC1	12A / 250VAC	
Min. load	5mA / 12VDC	
Electrical life	> 100.000 cycles	
Switching power	2500VA (resistive)	
General Specifications		
Voltage ranges VDC	5-6-12-24-48 60-110	
Voltage ranges VAC	6-12-24-48 115/120-230	
Insulation according to	EN 61810-5	
Consumption	0.9W DC-1.2 VA AC	
Approvals/Conformity	CE,TUV,UR,CSA,IMQ	
References		
On page	35	

RMI 4-5 (4 Poles)



Dimensions	36 x 21.5 x 28 1.42" x 0.85" x 1.10"	
Terminal types	Plug-in - PCB	
No. of Contacts	4 Change-over	
Contact rating	5A	
Features standard with:	Test button/Flag/LED	
Output Specifications		
Max. load AC1	6A / 250VAC	
Min. load	5mA / 12VDC	
Electrical life	> 100.000 cycles	
Switching power	1250VA (resistive)	
General Specifications		
Voltage ranges VDC	5-6-12-24-48 60-110	
Voltage ranges VAC	6-12-24-48 115/120-230	
Insulation according to	EN 61810-5	
Consumption	0.9W DC-1.2 VA AC	
Approvals/Conformity	CE,TUV,UR,CSA,IMQ	
References		
On page	38	

Types

RMI 2-10 (2 Poles) High Inrush



Dimensions	H x W x D mm H x W x D inches	36 x 21.5 x 28 1.42" x 0.85" x 1.10"
Terminal types	Plug-in - PCB	
No. of Contacts	2 Change-over	
Contact rating	10A	
Features standard with:	Test button/Flag/LED	
Output Specifications		
Max. load AC1	10A / 250VAC	
Min. load	10mA / 12VDC	
Electrical life	> 100.000 cycles	
Switching power	2500VA (resistive)	
General Specifications		
Voltage ranges VDC	6 - 9 - 12 - 24 - 36 - 48 100 - 110 - 220 - 240	
Voltage ranges VAC	6 - 12 - 24 - 36 - 48 110 - 120 - 220 - 240 - 380	
Insulation Coil/Contact	EN 61810-5	
Consumption	0.9W DC-1.2 VA AC	
Approvals/Conformity	CE,TUV,UR,CSA,IMQ,RINA	
References		
On page	26	

RMI 3-7 (3 Poles) High Inrush



Dimensions	36 x 21.5 x 28 1.42" x 0.85" x 1.10"	
Terminal types	Plug-in - PCB	
No. of Contacts	3 Change-over	
Contact rating	7A	
Features standard with:	Test button/Flag/LED	
Output Specifications		
Max. load AC1	7A / 250VAC	
Min. load	10mA / 12VDC	
Electrical life	> 100.000 cycles	
Switching power	1750VA (resistive)	
General Specifications		
Voltage ranges VDC	6 - 9 - 12 - 24 - 36 - 48 100 - 110 - 220 - 240	
Voltage ranges VAC	6 - 12 - 24 - 36 - 48 120 - 220 - 240 - 380	
Insulation Coil/Contact	EN 61810-5	
Consumption	0.9W DC-1.2 VA AC	
Approvals/Conformity	CE,TUV,UR,CSA,IMQ	
References		
On page	29	

RMI 4-5 (4 Poles) High Inrush



Dimensions	36 x 21.5 x 28 1.42" x 0.85" x 1.10"	
Terminal types	Plug-in - PCB	
No. of Contacts	4 Change-over	
Contact rating	5A	
Features standard with:	Test button/Flag/LED	
Output Specifications		
Max. load AC1	5A / 250VAC	
Min. load	10mA / 12VDC	
Electrical life	> 100.000 cycles	
Switching power	1250VA (resistive)	
General Specifications		
Voltage ranges VDC	6 - 9 - 12 - 24 - 36 - 48 100 - 110 - 220 - 240	
Voltage ranges VAC	6 - 12 - 24 - 36 - 48 120 - 220 - 240 - 380	
Insulation Coil/Contact	EN 61810-5	
Consumption	0.9W DC-1.2 VA AC	
Approvals/Conformity	CE,TUV,UR,CSA,IMQ,RINA	
References		
On page	32	

Industrial Relays Overview

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Types

	RPY 1	RPY 2	RPY 3	RPY4
				
Dimensions H x W x D mm	36 x 21.5 x 28	36 x 21.5 x 28	36 x 31.5 x 28	36 x 41.5 x 28
H x W x D inches	1.42" x 0.85" x 1.10"	1.42" x 0.85" x 1.10"	1.42" x 1.24" x 1.10"	1.42" x 1.63" x 1.10"
Terminal types	Faston or PCB	Faston or PCB	Faston or PCB	Faston or PCB
No. of Contacts	1 Change-over	2 Change-over	3 Change-over	4 Change-over
Contact rating	16 A	10 A	10 A	10 A
Features standard with:	-	-	-	-
Output Specifications				
Max. load AC1	16 A	10 A	10 A	10 A
Min. load	-	-	-	-
Electrical life	1 x 10 ⁵	1 x 10 ⁵	1 x 10 ⁵	1 x 10 ⁵
Switching power	1HP @ 240VAC - 1/2HP @ 120VAC	3/4HP @ 240VAC - 1/2HP @ 120VAC	3/4HP @ 240VAC - 1/2HP @ 120VAC	3/4HP @ 240VAC - 1/2HP @ 120VAC
General Specifications				
Voltage ranges VDC	6 - 9 - 12 - 24 - 36 - 48 100 - 110 - 220 - 240	6 - 9 - 12 - 24 - 36 - 48 100 - 110 - 220 - 240	6 - 9 - 12 - 24 - 36 - 48 110 - 220	6 - 9 - 12 - 24 - 36 - 48 110 - 220
Voltage ranges VAC	6 - 12 - 24 - 36 - 48 - 110 120 - 220 - 240 - 380	6 - 12 - 24 - 36 - 48 - 110 120 - 220 - 240 - 380	6 - 12 - 24 - 36 - 48 - 110 120 - 220 - 240 - 380	6 - 12 - 24 - 36 - 48 - 100/110 120 - 220 - 240 - 380
Insulation Coil/Contact	2000/1200VAC	2000/1200VAC	2000/1200VAC	2000/1200VAC
Consumption	DC=0.9 W - AC=1.2 VA	DC=0.9 W - AC=1.2 VA	DC=1.4 W - AC=2 VA	DC=1.5 W - AC=2.5 VA
Approvals/Conformity	CE,TUV,UR,CSA	CE,TUV,UR,CSA	CE,TUV,UR,CSA	CE,TUV,UR,CSA
References				
On page	47	51	55	59

Types

	CF / CS	N series (1/2 Poles)
		
Dimensions H x W x D mm	26.42 x 68.58 x 34.54	36 x 50.5 x 33.5
H x W x D inches	1.04" x 2.70" x 1.35"	1.42" x 1.99" x 1.32"
Terminal types	Faston - PCB	Faston - Bolt - PCB
No. of Contacts	2 Normally open 2 Change-over	1 Normally open 2 Normally open
Contact rating	30A	30A
Features standard with:	-	DIN rail mount/Test button/LED
Output Specifications		
Max. load AC1	30A	30A (1NO) - 25A (2NO)
Min. load	-	-
Electrical life	1 x 10 ⁵	1 x 10 ⁵
Switching power	8310VA / 840W	8370VA / 840W
General Specifications		
Voltage ranges VDC	6 - 12 - 24 - 48 - 110	6 - 12 - 24 - 48 100 - 110
Voltage ranges VAC	24 - 120 - 220 - 240 - 277	12 - 24 - 48 115 - 230
Insulation Coil/Contact	4000 VAC	4000VAC
Consumption	DC=1.7 W - AC=4 VA	DC=1.9W - AC=2.5VA
Approvals/Conformity	CE,cURus	CE,TUV,cURus
References		
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Specifications are subject to change without notice. Pictures are just an example. For special features and/or customization, please ask to our sales network. 011010

Industrial Sockets Overview

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Types

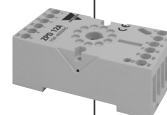
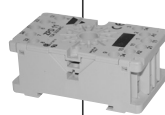
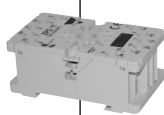
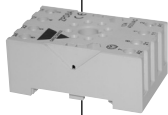
ZPD 8A / ZPD 11A

ZPD 8 / ZPD 11

ZPD 8XA / ZPD 11XA

ZPD 9A / ZPD 12A

ZR 08



General Specifications

Dimensions H x W x D mm	26.2 x 61.4 x 38	27 x 61.4 x 38	27 x 61.4 x 38	27 x 61.4 x 38	29 x 69 x 24.5
H x W x D inches	1.03" x 2.41" x 1.49"	1.06" x 2.41" x 1.49"	1.06" x 2.41" x 1.49"	1.06" x 2.41" x 1.49"	1.14" x 2.72" x 0.96"
Rated volt. / Rated curr.	400VAC / 10A	300VAC / 10A	300VAC / 10A	400VAC / 10A	300VAC / 12A
Insulation voltage	> 3kV	> 3kV	> 3kV	> 3kV	> 3kV
Socket material	PA46-S250F6 (V0)	PA6 + GF (V1)	PA66 + GF (V0)	PA6 6+ GF (V0)	PA6 + GF - V2
Mounting	DIN-rail	DIN-rail	DIN-rail	DIN-rail	DIN-rail
Protection degree	IP 20	IP 20	IP 20	IP 20	IP 20B (EN 60529)
Approvals	CE, cURus, IMQ, RINA	CE, UR, CSA	CE, cURus	CE, cURus	CE

References

Relay types	RCP8 - RCP11	RCP8 - RCP11	RCP8 - RCP11	RCP8 - RCP11	RMI A2 - RMI A4
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Types

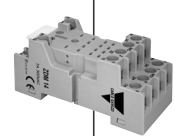
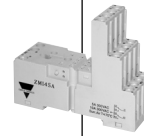
ZSN 8 / ZSN 11

ZC 8 / ZC 11

ZMI 2NA / ZMI 4NA

ZMI 2 / 3 / 4SA

ZDM 14A



General Specifications

Dimensions H x W x D mm	21.5 x 47.5 x 33	18.5 x Ø20	42.5 x 75 x 27	62 x 77 x 27	29 x 67 x 29
H x W x D inches	0.85" x 1.87" x 1.30"	0.73" x Ø0.79"	1.67" x 2.95" x 1.06"	2.44" x 3.03" x 1.06"	1.14" x 2.63" x 1.14"
Rated volt. / Rated curr.	300V / 10A	300V / 10A	300VAC / 10A	300VAC / 10A	300VAC / 10A
Insulation voltage	> 3kV	> 3kV	> 4kV	> 4kV	> 3kV
Socket material	Phenolic-Resin	PPEm	PA66 + GF - V2	PA66 + GF - V2	PA66 + GF (V0)
Mounting	Panel mounting	PCB	DIN-rail	DIN-rail	DIN-rail
Protection degree	IP 00	IP 00	IP 20	IP 20	IP 20B (EN 60529)
Approvals	CE, cURus, CSA, CSv	CE, cURus, CSA, CSv	CE, cURus, IMQ, RINA	CE, cURus	CE, cURus

References

Relay types	RCP8 - RCP11	RCP8 - RCP11	RMI A2 - RMI A4	RMI A2 - RMI A3 - RMI A4	RMI A2 - RMI A4
On page	25	24	41	42	44

Types

ZC 15/2A - ZC 15/4A

ZC 15/2 - ZC 15/4

ZY 08

ZY 14



General Specifications

Dimensions H x W x D mm	16 x 21.5 x 29	16.5 x 21.5 x 29.5	16 x 21.5 x 29	16 x 41 x 29
H x W x D inches	0.63" x 0.85" x 1.14"	0.65" x 0.85" x 1.16"	0.63" x 0.85" x 1.14"	0.63" x 1.61" x 1.14"
Rated volt. / Rated curr.	300V / 12A - 300V / 10A	250V / 10A	300VAC / 16A	300VAC / 16A
Insulation voltage	2kV	2kV	2kV	2kV
Socket material	ABS	PPEm	ABS	ABS
Mounting	PCB	PCB	PCB	PCB
Protection degree	IP 00	IP 00	IP 00	IP 00
Approvals	CE, cURus	CE, cURus, CSA, CSv	CE	CE

References

Relay types	RMI A2 - RMI A4	RMI A2 - RMI A4	RPY A1 - RPY A2	RPY A4
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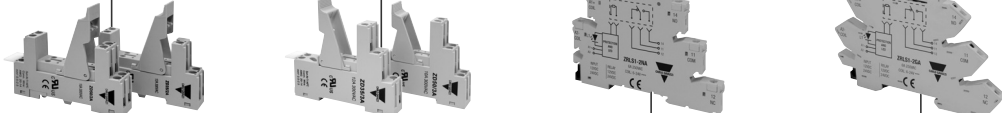
Industrial Sockets Overview

CARLO GAVAZZI

Types

	ZPY08A	ZPY11A	ZPY14A	ZPY08C
				
General Specifications				
Dimensions H x W x D mm	27.8 x 30 x 67.5	27.8 x 40 x 67.5	27.8 x 50.5 x 67.5	32 x 28.5 x 78.5
H x W x D inches	1.09" x 1.18" x 2.66"	1.09" x 1.57" x 2.66"	1.09" x 1.99" x 2.66"	1.26" x 1.12" x 3.09"
Rated volt. / Rated curr.	300VAC / 16A	400VAC / 10A	400VAC / 10A	300VAC / 16A
Insulation voltage	> 2kV	> 2kV	> 2kV	> 3kV
Socket material	PA66 + GF (V0)	PA66 + GF (V0)	PA66 + GF (V0)	PA66 + GF (V0)
Mounting	DIN Rail	DIN Rail	DIN Rail	DIN Rail
Protection degree	IP 00	IP 00	IP 00	IP00
Approvals	CE, cURus, CSA	CE, cURus, CSA	CE, cURus, CSA	CE
References				
Relay types	RPY A1 - RPY A2	RPY A3	RPY A4	RPY A1 - RPY A2
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Types

	ZD 35/2A - ZD 50/2A	ZD 35/3A - ZD 50/3A	ZRLS-1NA	ZRLS-1GA
				
General Specifications				
Dimensions H x W x D mm	42.5 x 76.4 x 15.6	61 x 76.4 x 15.6	76.1 x 88.6 x 6.2	80 x 101.8 x 6.1
H x W x D inches	1.67" x 3" x 0.61"	2.40" x 3" x 0.61"	2.99" x 3.49" x 0.24"	3.15" x 4" x 0.24"
Rated volt. / Rated curr.	300VAC / 12A and 10A x 2	300VAC / 12A and 10A x 2	300VAC / 6A	300VAC / 6A
Insulation voltage	-	-	> 3kV	> 3kV
Socket material	PA66 + GF - V2	PA66 + GF - V2	PA66 + GF (V0)	PA66 + GF (V0)
Mounting	DIN-rail	DIN-rail	DIN-rail	DIN-rail
Protection degree	IP 20	IP 20	IP 20 B	IP 20 B
Approvals	CE, cURus (12 A 300 VCA)	CE, cURus (12 A 300 VCA)	CE, cURus	CE, cURus
References				
Relay types	LC - M25 - MZ 2 cont. or 1 cont. 16A	LC - M25 - MZ 2 cont. or 1 cont. 16A	RLS E - RLS S	RLS E - RLS S
On page	75	76	77	78

Types

	Additional Modules	Additional Modules	Springs	Accessories
				
General Specifications				
Dimensions H x W x D mm	23.5 x 13 x 9	36 x 35 x 10		
H x W x D inches	0.93" x 0.51" x 0.35"	1.42" x 1.38" x 0.39"		
Material	PA66 + GF (V0)	PA66 + GF (V0)		
Terminal material	CuSn	CuSn		
Operating temperature	-40° to +70°C (-40° to +158°F)	-40° to +70°C (-40° to +158°F)		
Protection Degree	IP40	IP40		
Approvals/Conformity	CE	CE		
References				
Socket types	ZMI - ZD - ZDM all types	ZPD 9A - ZPD 12A	all sockets	ZRLS1 - ZD - ZMI
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Introduction

According to the U.S.A.S.I. (United States of America Standards Institute) a relay can be defined as: an electrically controlled device that opens and closes an electrical contact to effect the operation of other devices in the same or another circuit. Relays are an important factor in today's industrial processes.

More than 25 billion relays operate today all over the world as an interface between electrical control circuits and electrical loads. Technical progress has led to miniature-sized relays in mono-, bi- and tristable executions which need only a little or even no supply voltage to produce high contact power.

Carlo Gavazzi and Feme - a name synonymous with the development of relays

The production of relays has a long tradition at Carlo Gavazzi and Feme. For more than 35 years, Feme has been manufacturing quality relays. In 1987 Feme joins Carlo Gavazzi.



Carlo Gavazzi Automation Components headquarters in Milan

Function of a relay

A relay fulfills two fundamental tasks:

Galvanic separation (insulation) between the control section and the switching section.

The switching of power loads with high voltage and/or high current by means of low power consumption (low voltage/ low current) even as low electrical signals.

There is a very wide application field for relays. Where electronic and

electromechanical conditions of use need to satisfy the above mentioned conditions, a relay is required, e.g. for control equipment, timers, temperature control, signal control and so on.

There are two different kinds of devices:

The electromechanical relay and the electronic relay (Solid State Relay, SSR)

In an electromechanical relay, a high insulation condition exists between open contacts when the device is switched.

On the other hand with the SSR this is

not the case. This means a different approach to safety problems. However, the SSR has no contact bounce (no moving parts) and very low pick-up times. In addition, the ratio between device cost and switched power is much higher in the SSR than in an electromechanical relay.

The SSR is suited for particular appliances in which high switching frequency is important without contact wear.

Main parts of a relay

An electromechanical relay composes two different devices or parts:

an electromagnetic and an electrical switch.

The first is the control section and the second the switching section used to be directly applied to the electrical load. The electromagnet makes a conversion of an electrical current into a magnetic flux which generates a force to move the switching part.

Electromagnet

Fig. 1 shows a classic electromagnet configuration with the four basic parts:

- The coil: This consists of one or more copper wire windings, usually wound over a bobbin made of an insulated material.

- The ferromagnetic core.

- The ferromagnetic joke.

- The ferromagnetic moving armature.

Additional parts:

- Contact springs: (Contact blades) fixed and movable
- Contacts
- Push-bar
- Contacts and coil pins
- Contact support base
- Dust cover

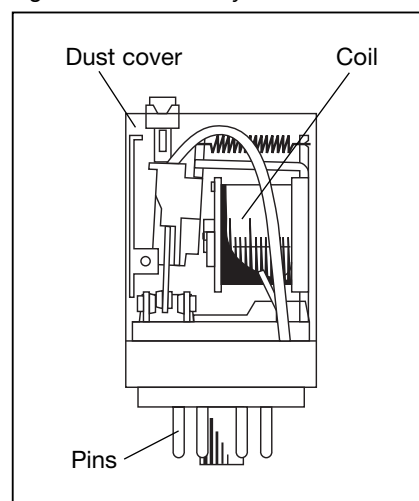
Switching section

The classic switching section configuration is formed by one change over contact scheme. In the following explanation, this example will be used since it is the basic scheme to which all the others may be referred to.

The basic parts are:

- the normally closed contact fixed blade (NC)
- the movable contact blade
- the normally open contact fixed blade (NO)
- the push-bar
- the insulation contact support base
- the soldering contact pins

Fig. 1 Classical relay structure



Main schemes and mechanical solutions

There are different contact scheme configurations to solve the various needs of the appliance problems: Normally open contacts (NO), normally closed contacts (NC) and change over contacts are the basic configurations used to draw all relay contact configuration schemes. By using these basic contacts, we can construct many relay configurations to succeed in solving the problems of appliances. The only theoretical limits are relay dimensions, electromagnetic power, switching power and drawing complications. The contact switching combinations available on a relay are defined in terms of number of poles, number of throws (single or double), normal position (open or closed contacts), and the sequence to make and break. Abbreviations used to define the exact nature of the contacts are as follows:

SP = single pole

ST = single throw

NO = normally open

NC = normally closed

B = break

M = make

DP = double pole

DT = double throw

and so on

Another classification is also used by some relay producers (e.g. Ferme).

The code is the following: X, Y, Z

- X = number of NO contacts
- Y = number of NC contacts
- Z = number of change over contacts

For example, we can have the following situation:

100 = SPST-NO

(1-form A)

010 = SPST-NC

(1-form B)

001 = SPDT = 1d

(1-form C)

200 = DPST-NO

(2-form A)

020 = DPST-NC

(2-form B)

002 = DPDT = 2d

(2-form C)

and so on

Contact Materials

Contact materials and special alloys have a great importance in switching problems and each appliance needs the correct evaluation of the electrical load ambient conditions and other information to make to right choice.

Alloys and contact materials

The choice of the contact material depends on the application. The most commonly used contact materials are:

Silver

Ag is probably the most widely used contact material available. It has the highest electrical and thermal conductivity of any know metal and shows good resistance to oxidation and tarnishing except in the presence of sulfur. Sulfur-containing atmospheres will produce silver sulfide that increases contact resistance. Silver sulfide, however, is quite soft and easily displaced with adequate contact pressure and wipe or slide. Shelf life protection and low initial contact resistance will be provided by a pore-free (1 to 3mm) gold plate (Au). As a result of silver's high electrical and thermal conductivity, contacts of fine silver work well at currents in the light to medium range (1-20A) where light to moderate contact pressure is available and low

contact resistance is requirement. Silver has the *lowest* cost of all precious metal contact materials and it is readily formed into various contact shapes (rivets, buttons, etc.) due to its ductility.

Silver cadmium oxide

(Ag 90% - CdO 10%) has a wide range of applications in power loads due to its good performance against contact sticking (welding) and its arc suppression effect. Its application range is from 12 to 380 VAC and from 100 mA to 30 A. It is especially used for resistive and inductive loads such as motor loads, heating resistors, lamp loads, solenoids and others. This material is a standard material that covers most customer needs. It suffers from sulphide problems but the presence of arc and relative high voltage and currents make this problem negligible (arc and voltage perforate sulphide layers).

Silver Indium Tin Oxide

Silver indium tin oxide (AgSnInO) as well as silver tin oxide (AgSnO) has become good alternatives to the AgCdO contacts, described below. Over the past years, the use of cadmium in contacts as well as batteries has been restricted in many areas of the world; therefore, tin oxide contacts are good for high inrush loads, like tungsten lamps, where the steady state current is low. Although more weld resistant, AgInSn and AgSn contacts have a higher bulk resistance (less conductivity) than Ag and AgCdO contacts. Due to their resistance to welding, the above contacts are very popular where heavy 12VDC inductive loads tend to cause material transfer.

Electrical relay life

The electrical life, or switching life, is the minimum number of cycles that a relay is able to perform under particular conditions of current, voltage, operating frequency and ambient temperature, where "cycle" is a complete switching operation, starting from OFF status to ON status and back again to OFF status.

The end of the electrical life occurs when the contacts are not able to switch the electrical load within contact resistance values (or contact voltage drops) that, becoming higher, stops the regular switching operations (the limits depend on application).

In relay specifications, electrical life is given in the following way: Number of cycles at nominal current - nominal voltage - stated frequency and ambient temperature.

E.g. for relay type MZP 002 46 05, the electrical life is:

Number of cycles: 2×10^5 at 5 A - 250VAC - 50Hz resistive load 1000 cycles/hour - ambient temperature 70°C.

In practice, customers also require the

electrical life at lower current values. So by means of laboratory tests, an electrical life curve is ascertained in which there is electrical life values (cycles) function of the electrical load current (Fig. 2)

The diagram shows the electrical life of a relay with resistive electrical load in AC at a specific switching frequency and 250VAC - 50 Hz. E.g. the electrical life of an MZP 200 48 05 with a resistive electrical load of 3A - 250VAC - 50 Hz is about

350,000 cycles. The inductive loads introduce high contact wear that reduces the relay contact life. This reduction, experimentally determined, is given by a multiplying factor for resistive electrical life (depending on the load power factor cosine) that must be used to determine the expected life.

Fig. 2 Relay electrical life diagram

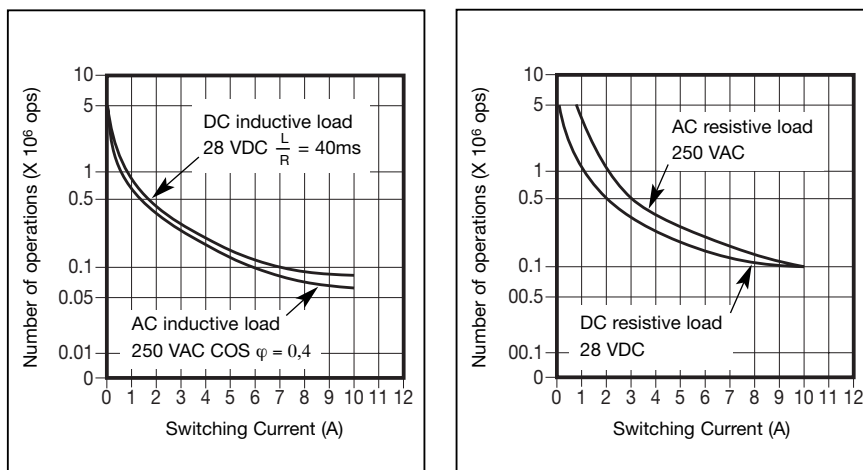


Fig. 3 Switching conditions (I, II) at 50 Hz AC

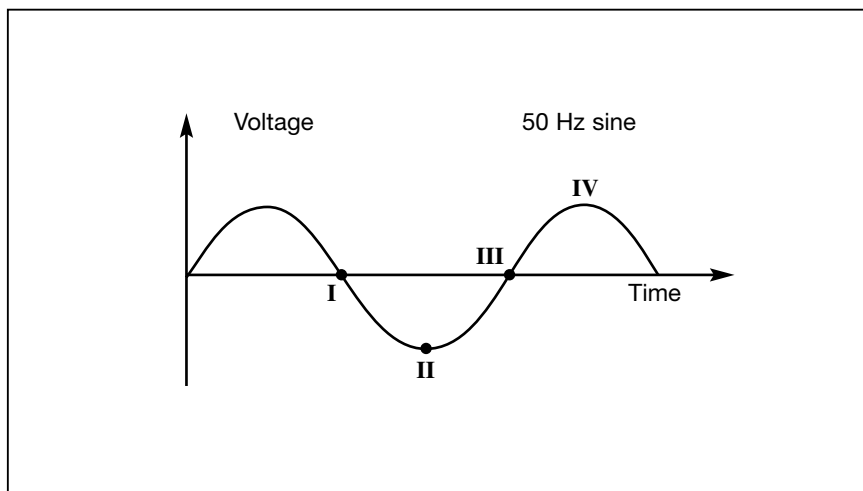
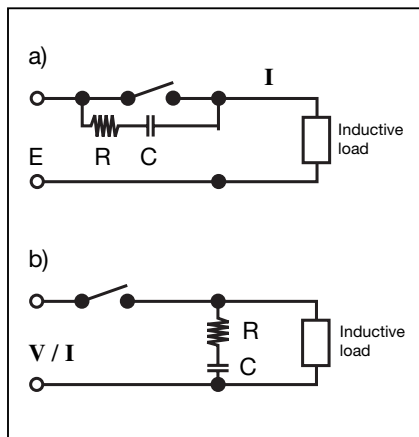


Fig. 4 R-C is a suppressor circuit



Switching in AC and DC

Different problems are involved in switching AC and DC electrical power loads and different aspects must be considered to understand the matter. In AC circuits (about 50 - 60Hz frequency) when relay contacts open, they may do it on two possible voltage load conditions with regard to voltage sine and arc phenomena (see Fig. 3).

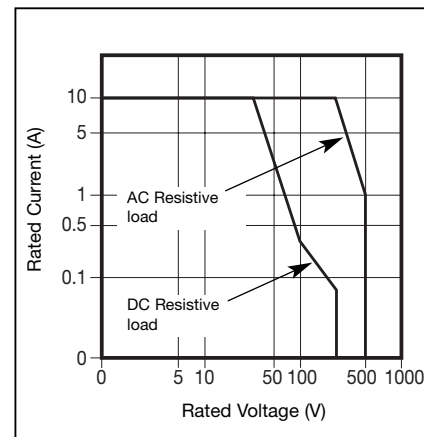
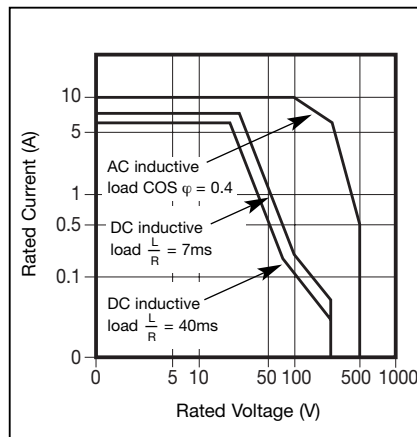
Switching on point I:

Voltage is near zero value:

No arc occurs. Switching between I - II:

We may have two situations in which voltage increases or decreases. In both cases arcing occurs but, owing to voltage crossing through the zero value, it is extinguished. As you know, electrical arcing depends on voltage value, contact gap, current intensity and contact shape and materials: For these reasons, in miniature relays there are physical limits connected to the above parameters that reduce the maximum switching AC voltage to about 380VAC. AC inductive loads are heavier than resistive ones from the point of view of contact wear, because load inductance increases the arc permanence with its damaging effects.

Fig. 5 Max. switching power in DC / AC



Arc interruption

In DC appliances, the arc interruption is a critical problem, because voltage does not cross the zero value like in AC. So when the electrical arc occurs, only contact gap and contact material properties contribute to arc extinction. Relays have normally a physical limit, depending on the above parameters, that make them unable to switch the load with currents and voltages higher than the specific values. These values are expressed by means of a curve that gives the maximum switching power ($U \times I$) with resistive and inductive loads L/R value of the timing constant is given $L =$ inductance (Henry), $R =$ resistance (Ohm).

Specific loads

Motor loads

Motor loads are inductive loads that show a particular behaviour when switched on. A current peak occurs due to the rotor inertia that is connected to the mechanical load applied to it. A locked rotor may have up to 6 times the rated current. Moreover, when it is switched OFF, we also have the damaging effect caused by inductive loads. So the right contact material choice is connected to the above load characteristics especially if a capacitor is connected to the motor. $AgSnO_2$ and tungsten contact materials are especially used for this application. Normally the motor load is expressed in HP (horse power), where 1HP is equal to about 745Watts.

Example: MZP A 001 41 10 has a motor load rating of 3/4 HP.

Capacitive loads

This is the heaviest contact load to be switched ON due to the high inrush current peak that occurs when the capacitor is discharged (like a short-circuit). The peak intensity may reach hundreds of ampères for a short time (micro-milliseconds) that must be supported by contacts. The contact sticking problem may be avoided in two ways:

- use of Tungsten contacts
- reducing the current peak by introducing a current limiting resistor

The same problem occurs when closing contacts with a charged capacitor: A violent discharge results.

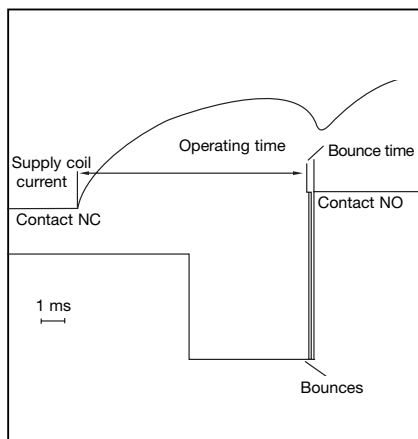
Switching time and contact bounce

When supplying a relay coil for opening and/or closing, this operation will happen in a time depending on electrical and mechanical inertia of the parts. The delay which elapses between the coil supply impulse and the steady contact closure or/and opening is the sum of the influence of the electromagnetic group and the switching section.

Electromagnetic group

The current flows through the coil with a delay caused by the coil inductance that opposes itself to current flux. Moreover, the movable parts such as the armature

Fig. 6 Pick up operating time



and push bar oppose their mass to the movement caused by the magnetic flux.

Switching section

The elastic forces stored in contact blades and springs and their elastic deformations are opposed to the movement of the relay parts; also the inertia of the contact masses affects this phenomenon. As a rule, the delay times for miniature relays reach values of some milliseconds (5-15ms) in pick-up operation and few milliseconds (1-5ms) in drop-out. In the drop-out phase the operating time is shorter due to the absence of the negative magnetic circuit delay. In fact when taking off the supply voltage from the coil terminal, the current flowing through the coil wire stops immediately and the relay drops out by means of the elastic energy stored in the contact blades.

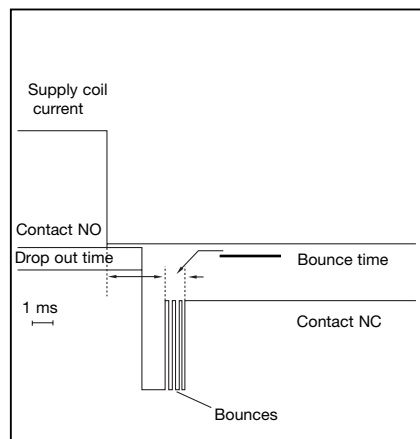
Bounces

In drop-out and pick-up phases when contacts close, they never make this operation in one time but the collision between the two contacts causes them to rebound. "Contact bounce" causes a continuous contact closing and opening. This affects especially contact performance such as electrical life and signal switching.

Dielectric strength

Dielectric strength or insulating strength are the parameters giving the ability of a material or an insulation to succeed in keeping an electrical separation between two parts. This characteristic is expressed in kV (1kV = 1000V) and it is measured

Fig. 7 R-C is a suppressor circuit



applying an AC voltage at 50Hz to 60Hz between the concerned parts. A leakage current flows between them, but, if it does not exceed the value of one mA (for convention), it is not considered as a failure in insulation. The test must be performed for 1 minute. An accelerated test of 1 second duration is allowed but we must increase the test voltage by 10%. The value of the dielectric withstanding voltage is influenced by the following parameters:

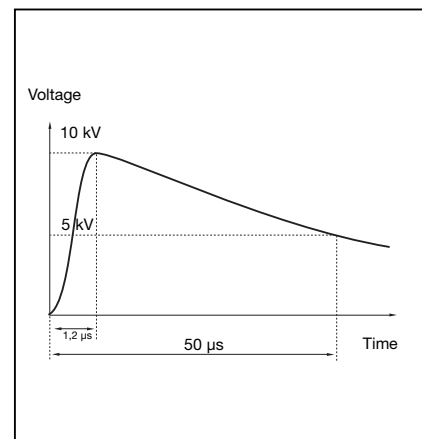
- air distances
- air humidity
- superficial distances (creepage distances)
- insulating material characteristics
- metallic conductor shapes

Insulation resistance

Another parameter giving a measurement of insulation performance between two conductive parts is the insulation resistance. This is the electrical resistance of insulation materials to an impressed DC voltage producing a leakage current through the surface of these materials. Low insulation resistance values may permit high leakage current affecting the insulation between the parts (safety and/or high impedance circuit problems). Applying a testing DC voltage of 500VDC with a Mohen Meter (also 100VDC test voltage) between the insulated parts gives an insulation resistance value expressed in MΩ (10⁶Ω).

Insulation resistance is very important in appliances in which safety requirements are indispensable such as medical equipment and all the appliances strictly connected to direct human contact. See section Insulation on Feme Data Sheets.

Fig. 8 Impulse test voltage peak shape



Impulse voltage test

The impulse voltage test consists of applying a voltage impulse between two insulated electrical parts to prove the ability of the relay to withstand, without damage, overvoltages of high value and very short duration. Overvoltages may sometimes occur due to incorrect circuit working or in presence of atmospheric discharge (lightning). These phenomena may be harmful to the electronic control circuits and especially to people's safety. An impulse of a specific voltage (Feme uses 5kV to 10kV or more) is applied between the parts simulating a lightning discharge with the following parameters:

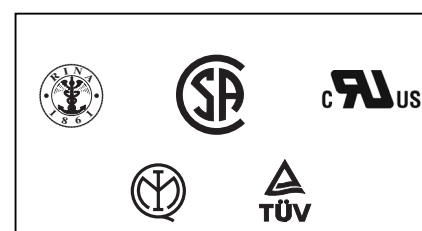
- front time: 1.2μs ± 30%
- time to half-value: 50μs ± 20

Three positive and three negative impulses must be applied at intervals of not less than 5 s. The pulse shape is shown in Fig. 8.

Approvals

Carlo Gavazzi relays are approved by the major Institutes.

Fig. 9 International approvals



Declaration

We
CARLO GAVAZZI AUTOMATION S.p.A.
Via Milano 13, 20020 - Lainate - MI - ITALY
Tel. +39 02 931761

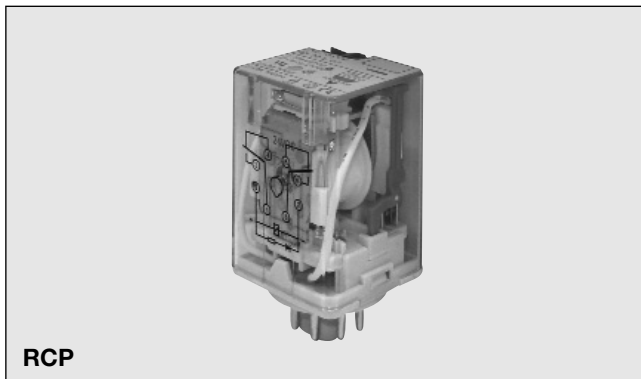
**with relevance to the European Directive 2002/95/EC of 27th January 2003
on the restriction of the use of certain hazardous substances
in electrical and electronic equipment (RoHS),**

**declare that all the products present in this catalogue,
manufactured after December 2004,
are RoHS compliant as do not contain
any of the following hazardous substances:**

**ASBESTOS
MERCURY
LEAD
RADIOACTIVE LUMINOUS MATERIALS
HEXAVALENT CHROMIUM
PBB
PBDE
PBDF**

Cadmium: Cadmium is present in the relays with AgCdO contacts. According to the Decision 2005/747/CE of the 21st October 2005, the Exempted application list of the Directive 2002/95/CE has been modified including Cadmium and compounds in Electrical contacts. Although products with AgCdO contacts are now RoHS compliant, versions without cadmium are available.

Industrial Relay Type RCP Monostable



- 8 or 11-pin socket mounting
- 2 or 3 change over contacts
- Long life (minimum 100.000 electrical operations)
@ 10A 250VAC /30VDC resistive load
- AC coils 6 to 230VAC
- DC coils 6 to 110VDC
- Matched sockets available
- Standard with LED, Push arm and Flag
- IP 40
- Conform to CE low voltage directive
- TÜV, UL, CSA, IMQ, RINA (marine) approved

Product Description

The RCP relay can be used for a wide range of industrial applications.

Available in 2 or 3 change-over contact configuration, Octal or Undecal version.

Ordering Key

RCP 8 002 24VDC /1

Type _____
 No. of pins _____
 Contact code _____
 Coil code _____
 Options _____

Approvals



Box content: 25 relays
 Box size: (W 215 x D 205 x H 80) mm Weight: 2400g
 (W 8.46 x D 8.07 x H 3.15) inches Weight: 84.65oz

Type Selection

Contact configuration	Contact rating	Contact code
2 change over contacts (DPDT {2-form C})	10A	002
3 change over contacts (3PDT {3-form C})	10A	003

Coil Characteristics, DC Standard Coils 1.5W

Coil Code	Nominal voltage VDC	@ +20°C (+68°F)		@ +40°C (+104°F)		Coil resistance Ω
		Pick-up voltage VDC	Drop-out voltage VDC	Pick-up voltage VDC	Drop-out voltage VDC	
6VDC	6	4.8	0.6	5.2	0.6	23.5 ±10%
12VDC	12	9.6	1.2	10.3	1.3	95.0 ±10%
24VDC	24	19.2	2.4	20.7	2.6	430.0 ±10%
48VDC	48	38.4	4.8	41.4	5.1	1630.0 ±15%
60VDC	60	48.0	6.0	48.6	6.4	1920.0 ±15%
100VDC	100	80.0	10.0	86.4	10.8	6800.0 ±15%
110VDC	110	88.0	11.0	95.0	11.8	7300.0 ±15%

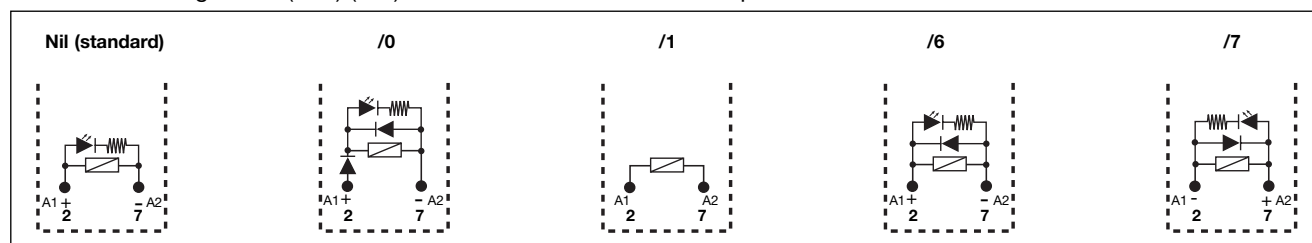
Coil Characteristics, AC Standard Coils 2.7VA

Coil Code	Nominal Voltage VAC	@ +20°C (+68°F)		@ +40°C (+104°F)		Coil resistance Ω
		Pick-up voltage VAC	Drop-out voltage VAC	Pick-up voltage VAC	Drop-out voltage VAC	
6VAC	6	4.8	1.8	5.2	1.9	3.9 ±10%
12VAC	12	9.6	3.6	10.3	3.8	16.3 ±10%
24VAC	24	19.2	7.2	20.7	7.7	70.0 ±10%
48VAC	48	38.4	14.4	41.4	15.5	315.0 ±15%
115/120VAC	115/120	88.0	36.0	95.0	38.8	1600.0 ±15%
230VAC	230	176.0	72.0	190.0	77.7	6800.0 ±15%

Coil operating range: see diagram n° 1 pag. 14

Options

Nil = Standard with Push Arm -LED (A1+) (A2-) - Flag	/1 = Without LED	/5 = Gilded Contacts Au > 0.5µm
/0 = Diode against polarity inversion + free-wheeling Diode (A1+) (A2-)	/2 = Without Flag	/6 = Free-Wheeling Diode (A1+) (A2-)
	/3 = Without Push Arm	/7 = Free-Wheeling Diode (A1-) (A2+)
	/4 = Gilded Contacts Au 5µm	



Contact Characteristics

Arrangement	002 / 003	Current	
Contact rating (with resistive load)	10A - 250VAC / 30VDC	Max. switching current	10A
UL rating	10A - 250VAC / 30VDC 1/3HP @ 240VAC 1/3HP @ 120VAC 1/2HP @ 277VAC	Initial contact resistance	100mΩ (@ 1A 24VDC)
		Max. switch. voltage	500VAC / 240VDC
		Max. switch. power resistive	2500VA / 300W
Standard rating	10A - 250VAC / 30VDC	Minimum Current	
Max. rating	10A - 250VAC / 30VDC	Min. applicable load /4 and /5 versions	5mA @ 12VDC 1mA @ 6VDC
Material	AgSnO ₂	Life	
		Electrical life	1x10 ⁵ ops
		Mechanical life	1x10 ⁷ ops

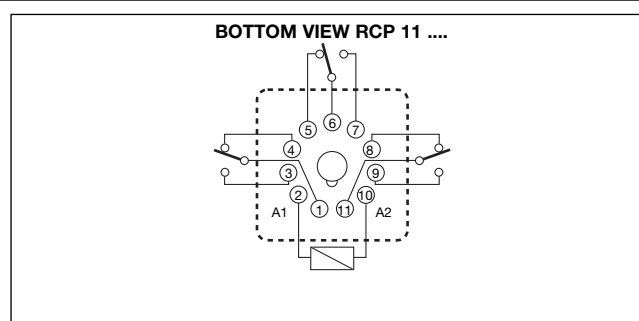
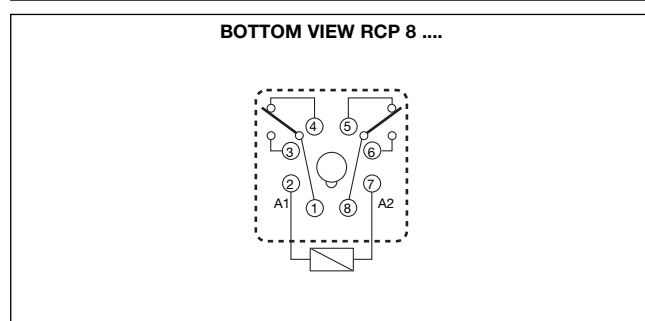
Insulation

Test Voltage (1 min.)		Insulation according to EN61810-5	
Between coil and contacts	3750VAC Vr.m.s	Rated insulation voltage	250V
Between open contacts	750VAC Vr.m.s	Impulsive insulation voltage	3.6kV
Contact/Contact	1250VA Vr.m.s	Pollution degree	2
Initial insulation resistance	500MΩ - 500VAC	Overvoltage category	III

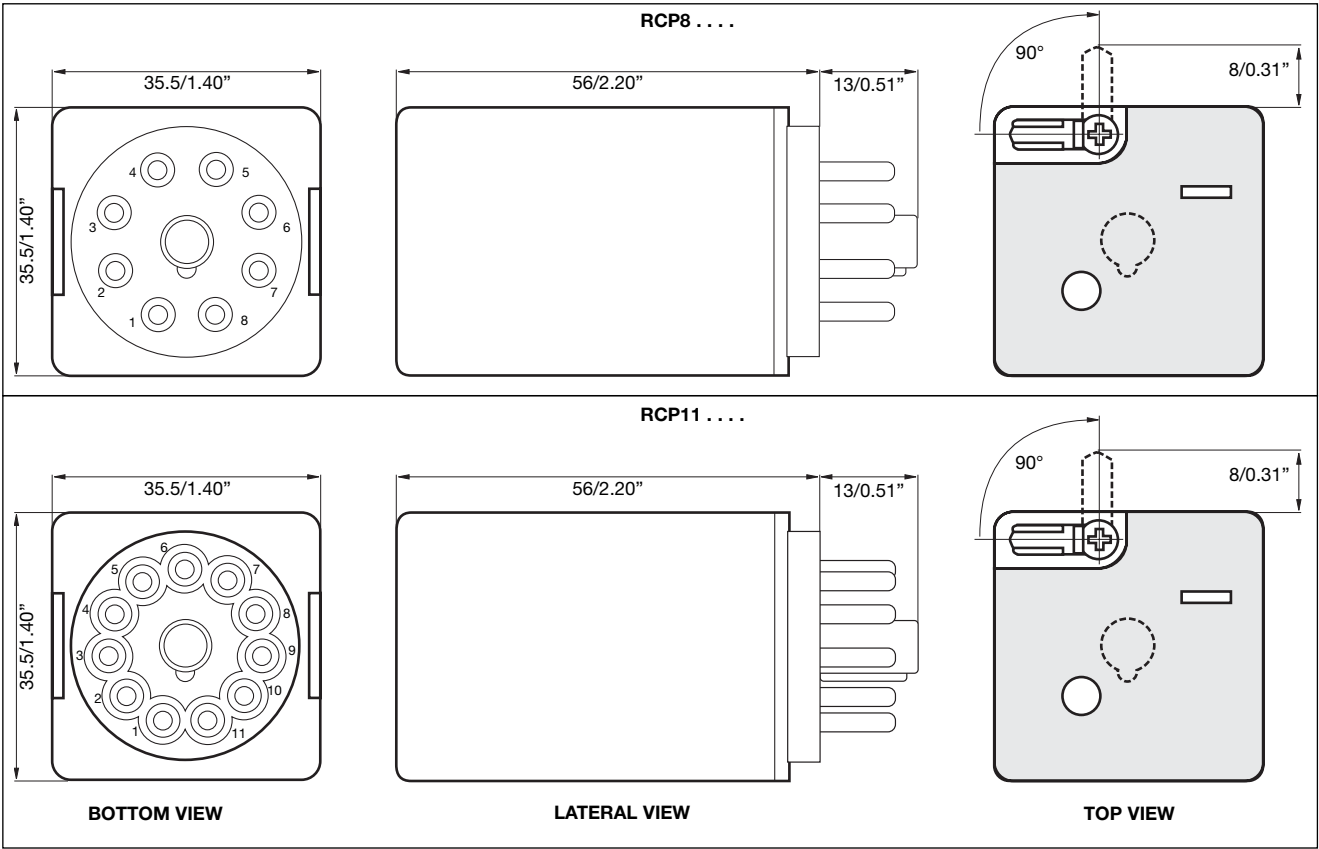
General Data

Operating time (At nominal voltage)	25ms max.	Shock resistance	
Release time (At nominal voltage)	25ms max.	Functional	98m/s ² /10G
Temperature rise (At nominal voltage)	+70°C (+44.6°F)	Destructive	980m/s ² /100G
Ambient temperature	-40° to +55°C (-40° to +131°F)	Humidity	98%, +40°C% (+104°F%)
Vibration resistance	10 to 55Hz 1.5mm (0.059")	Termination	Octal/Undecal-type plug-in
		Construction	Dust cover
		Weight	~85g (~2.998oz)

Wiring Diagrams

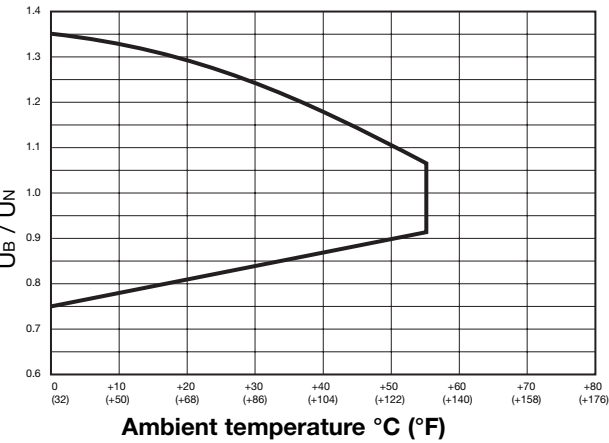


Dimensions mm/inches

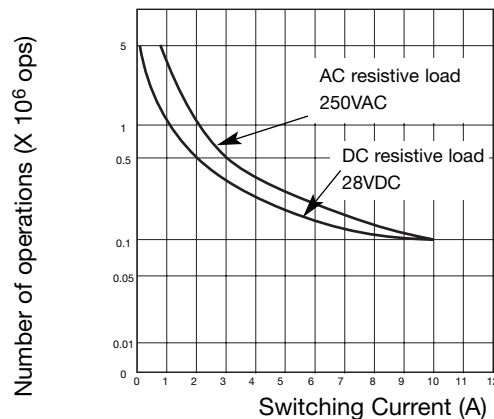
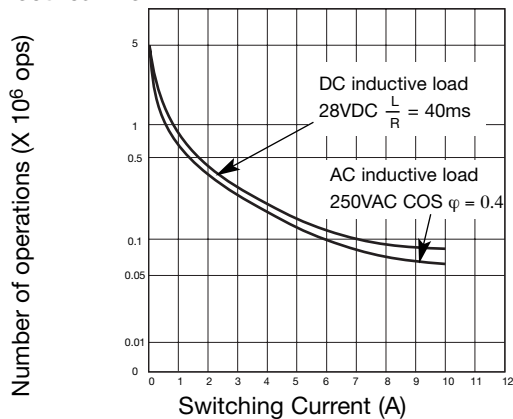


Diagrams

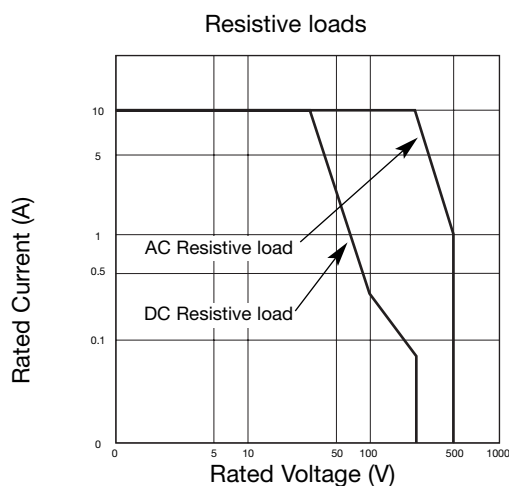
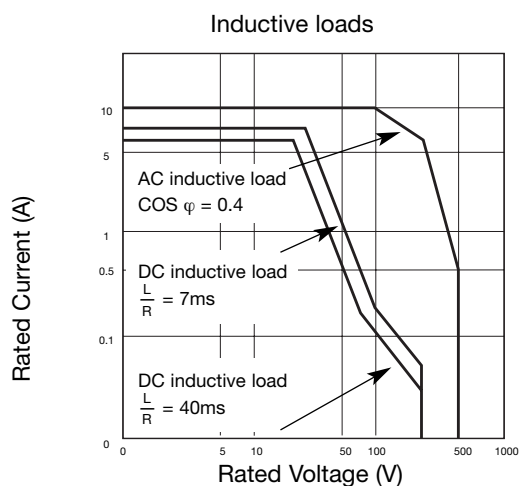
1 Coil Operating Range



2 Electrical life



3 Max. Contact capacity



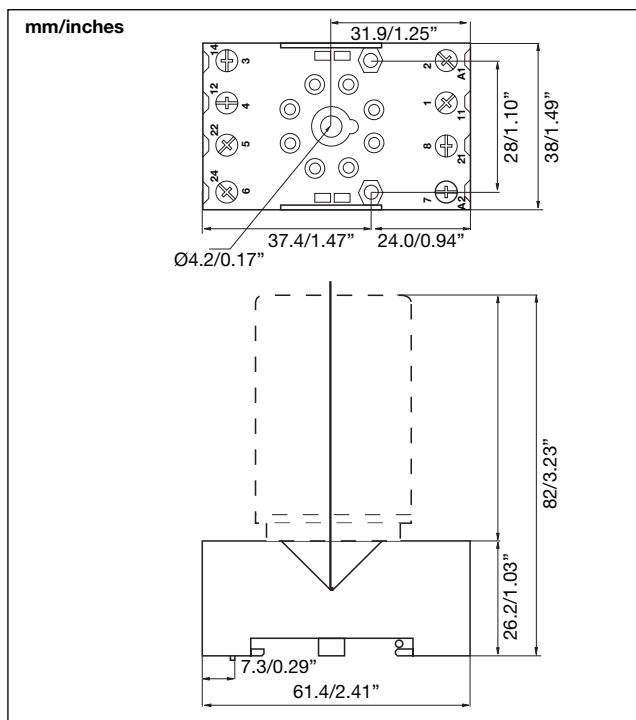
Bases and Sockets

DIN rail sockets codes are **ZPD8A**, **ZP11A**, **ZPD8**, **ZPD11**, **ZPD8XA**, **ZPD11XA**, **ZPD9A** and **ZPD12A** details and specifications from page 16 to 23 of industrial relays catalogue.

PCB and Panel Soldering sockets codes are **ZC8**, **ZC11** and **ZSN8**, **ZSN11** details and specifications from page 24 to page 25 of industrial relays catalogue.

Sockets for RCP relays

ZPD 8A



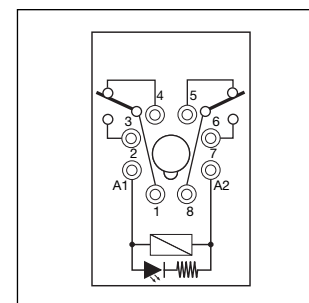
General data

Rated voltage	400VAC
Rated current	10A
Insulation voltage	>3kV
Protection degree	IP 20 (EN60529)
Operating temperature range	-25° to +70°C (-13° to +158°F)
Socket material	PA46-S250F6 (V0)
Socket colour	RAL 7035 / Pantone 1C
Terminal type	Screw cage
Screw type	M3 with combi head (slotted, Philips Gr.1, Pozi)
Maximum screw torque	1N/m
Max Wire section	2 x 2.5mm ² (14AWG)
Flex / compact wire	2 x 1.5mm ² (16AWG)
Cable End	
Contacts material	Nikel plated - CuSn6.5-0.1

Terminal type



Wiring diagram



Approvals



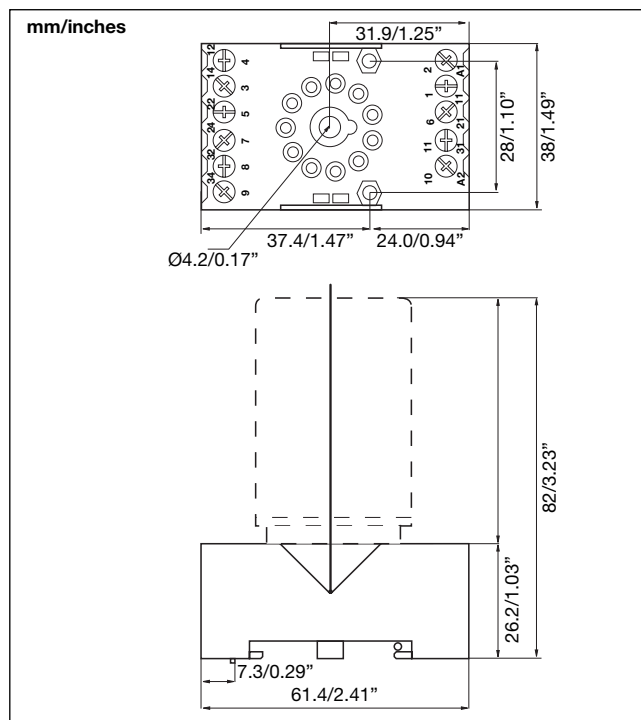
Ordering part number	ZPD8A
Box content:	10 sockets
Box size: (W 145 x D 130 x H 45) mm	Weight: 500g
(W 5.71 x D 5.12 x H 1.77) inches	Weight: 17.64oz

Optional Accessories (to be ordered separately if required)

Hold-down spring steel **SZPD56M** (see on page 81)

Sockets for RCP relays

ZPD 11A



General data

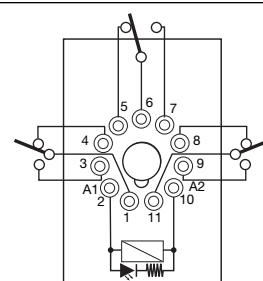
Rated voltage	400VAC
Rated current	10A
Insulation voltage	>3kV
Protection degree	IP 20 (EN60529)
Operating temperature range	-25° to +70°C (-13° to +158°F)
Socket material	PA46-S250F6 (V0)
Socket colour	RAL 7035 / Pantone 1C
Terminal type	Screw cage
Screw type	M3 with combi head (slotted, Philips Gr.1, Pozi)
Maximum screw torque	1N/m
Max Wire section	2 x 2.5mm ² (14AWG)
Flex / compact wire	2 x 1.5mm ² (16AWG)
Cable End	
Contacts material	Nikel plated - CuSn6.5-0.1

Terminal type

Screw cage



Wiring diagram



Approvals



Ordering part number

ZPD11A

Box content:

10 sockets

Box size: (W 145 x D 130 x H 45) mm Weight: 550g

(W 5.71 x D 5.12 x H 1.77) inches Weight: 19.40oz

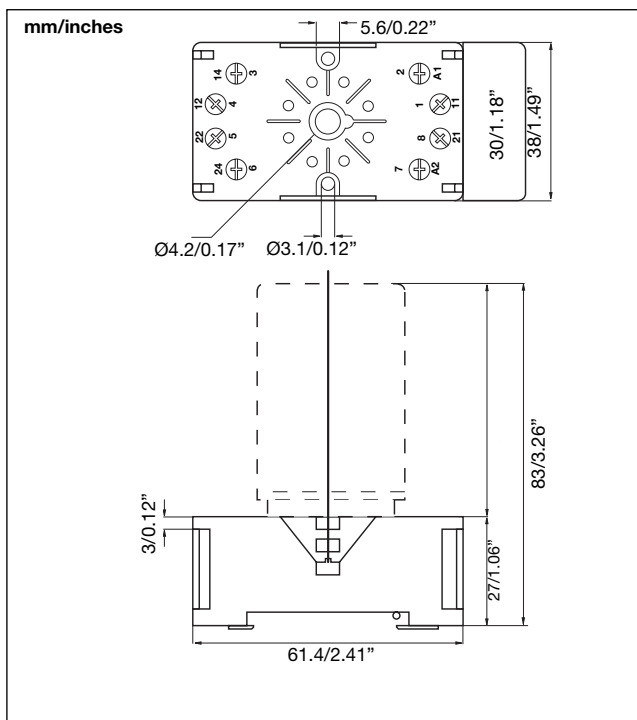
Optional Accessories (to be ordered separately if required)

Hold-down spring steel

SZPD56M (see on page 81)

Sockets for RCP relays

ZPD 8



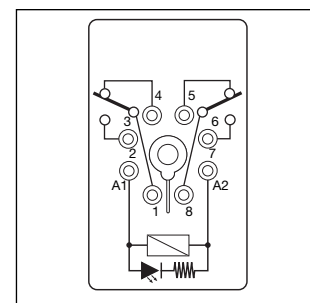
General data

Rated voltage	300VAC
Rated current	10A
CSA rating	12A @ 300VAC
UL rating	10A @ 300VAC 12A @ 150VAC
Insulation voltage	>3kV
Protection degree	IP 20 (EN60529)
Operating temperature range	-25° to +85°C (-13° to +185°F)
Socket material	PA6+GF (V1)
Socket colour	RAL 7035 / Pantone 1C
Terminal type	Screw cage
Screw type	M3 with combi head (slotted, Philips Gr.1, Pozi)
Maximum screw torque	0.8N/m
Max Wire section	2 x 2.5mm ² (14AWG)
Flex / compact wire	2 x 1.5mm ² (16AWG)
Cable End	
Contacts material	Nikel plated - CuZn33

Terminal type



Wiring diagram



Approvals



Ordering part number	9399020001
Box content:	10 sockets
Box size: (W 70 x D 140 x H 85) mm	Weight: 600g
(W 2.75 x D 5.51 x H 3.35) inches	Weight: 21.16oz

Optional Accessories (to be ordered separately if required)

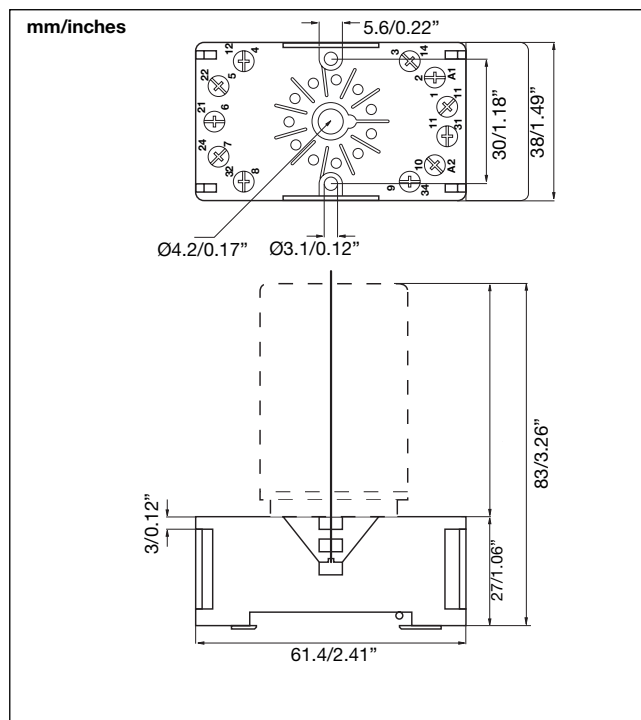
Hold-down spring steel SZPD56M (see on page 81)

Sockets for RCP relays

ZPD 11



ZPD 11



General data

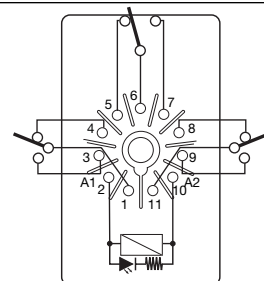
Rated voltage	300VAC
Rated current	10A
CSA rating	12A @ 300VAC
UL rating	10A @ 300VAC 12A @ 150VAC
Insulation voltage	>3kV
Protection degree	IP 20 (EN60529)
Operating temperature range	-25° to +85°C (-13° to +185°F)
Socket material	PA6+GF (V1)
Socket colour	RAL 7035 / Pantone 1C
Terminal type	Screw cage
Screw type	M3 with combi head (slotted, Philips Gr.1, Pozi)
Maximum screw torque	0.8N/m
Max Wire section	2 x 2.5mm ² (14AWG)
Flex / compact wire	2 x 1.5mm ² (16AWG)
Cable End	
Contacts material	Nikel plated - CuZn33

Terminal type

Screw cage



Wiring diagram



Approvals



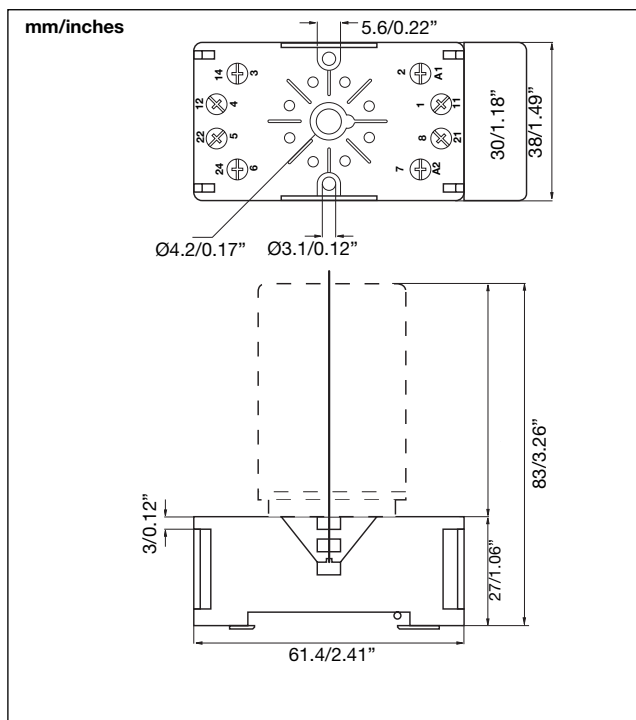
Ordering part number	9399020101
Box content:	10 sockets
Box size: (W 70 x D 140 x H 85) mm	Weight: 600g
(W 2.75 x D 5.51 x H 3.35) inches	Weight: 21.16oz

Optional Accessories (to be ordered separately if required)

Hold-down spring steel	SZPD56M (see on page 81)
------------------------	--------------------------

Sockets for RCP relays

ZPD 8 XA



ZPD 8XA

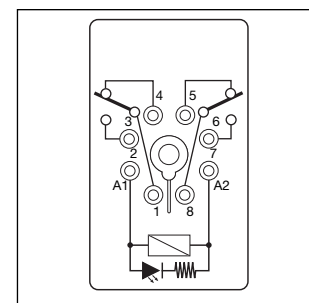
General data

Rated voltage	300VAC
Rated current	10A
Insulation voltage	>3kV
Protection degree	IP 20 (EN60529)
Operating temperature range	-25° to +70°C (-13° to +158°F)
Socket material	PA66+GF (V0)
Socket colour	RAL 7035 / Pantone 1C
Terminal type	Screw cage
Screw type	M3 with combi head (slotted, Philips Gr.1, Pozzi)
Maximum screw torque	1N/m
Max Wire section	2 x 2.5mm ² (14AWG)
Flex / compact wire	2 x 1.5mm ² (16AWG)
Cable End	
Contacts material	Nikel plated - CuSn

Terminal type



Wiring diagram



Approvals



Ordering part number	ZPD8XA
Box content:	10 sockets
Box size: (W 70 x D 140 x H 85) mm	Weight: 650g
(W 2.75 x D 5.51 x H 3.35) inches	Weight: 22.93oz

Optional Accessories (to be ordered separately if required)

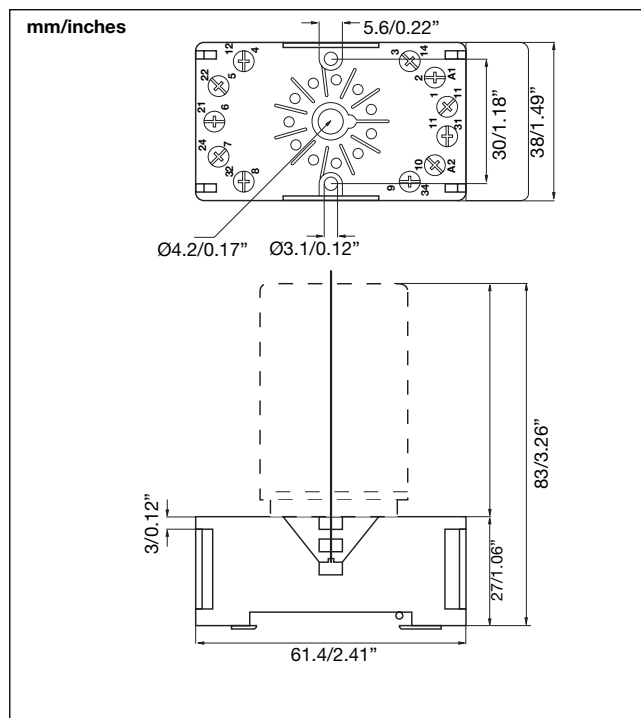
Hold-down spring steel **SZPD56M** (see on page 81)

Sockets for RCP relays

ZPD 11 XA



ZPD 11XA



General data

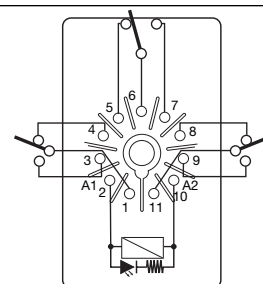
Rated voltage	300VAC
Rated current	10A
Insulation voltage	>3kV
Protection degree	IP 20 (EN60529)
Operating temperature range	-25° to +70°C (-13° to +158°F)
Socket material	PA66+GF (V0)
Socket colour	RAL 7035 / Pantone 1C
Terminal type	Screw cage
Screw type	M3 with combi head (slotted, Philips Gr.1, Pozi)
Maximum screw torque	1N/m
Max Wire section	2 x 2.5mm ² (14AWG)
Flex / compact wire	2 x 1.5mm ² (16AWG)
Cable End	
Contacts material	Nikel plated - CuSn

Terminal type

Screw cage



Wiring diagram



Approvals



Ordering part number	ZPD11XA
Box content:	10 sockets
Box size: (W 70 x D 140 x H 85) mm	Weight: 650g
(W 2.75 x D 5.51 x H 3.35) inches	Weight: 22.93oz

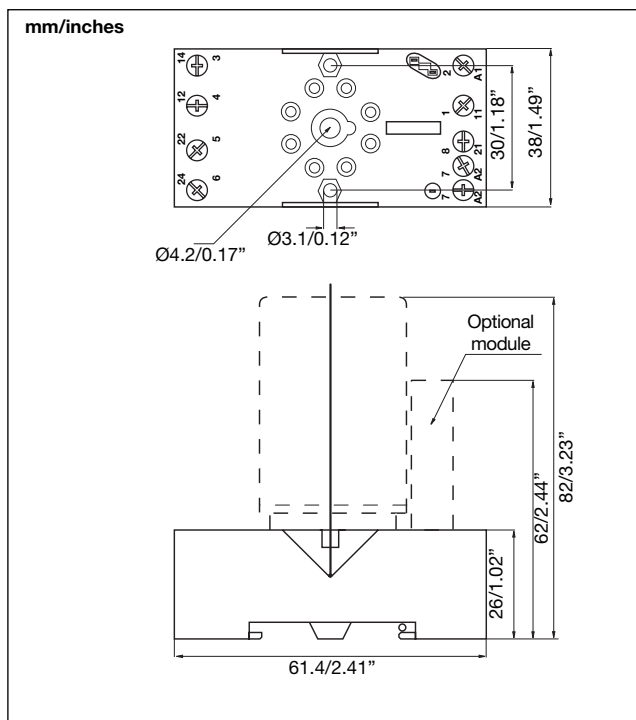
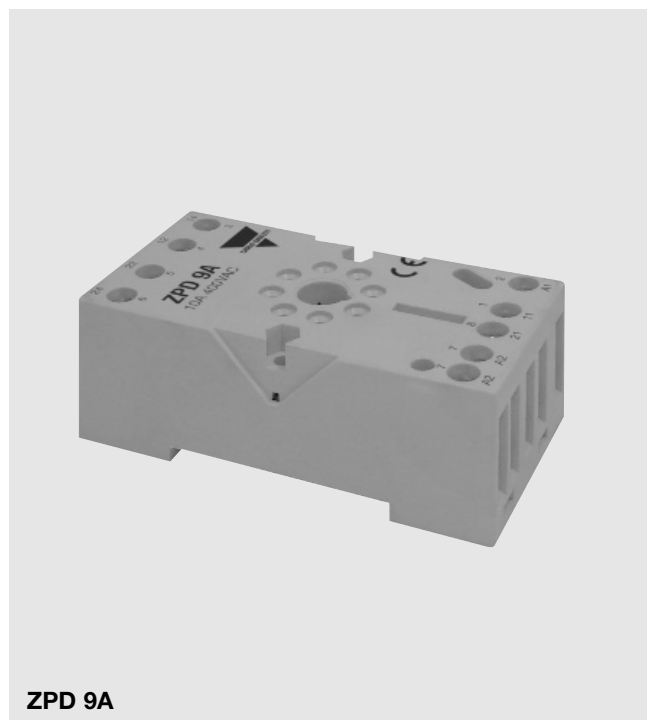
Optional Accessories (to be ordered separately if required)

Hold-down spring steel

SZPD56M (see on page 81)

Sockets for RCP relays

ZPD 9A



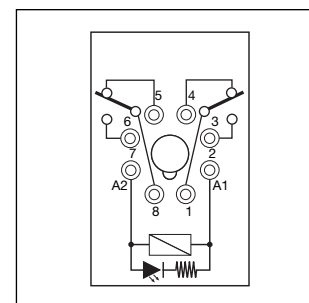
General data

Rated voltage	400VAC
Rated current	10A
Insulation voltage	> 3kV
Protection degree	IP 20
Operating temperature range	-25° to +70°C (-13° to +158°F)
Socket material	PA66+GF (V0)
Socket colour	RAL 7035 / Pantone 1C
Terminal type	Screw cage
Screw type	M3 with combi head (slotted, Philips Gr.1, Pozi)
Maximum screw torque	1N/m
Max Wire section	2 x 2.5mm ² (14AWG)
Flex / compact wire	2 x 1.5mm ² (16AWG)
Cable End	
Contacts material	Nikel plated - CuZn33

Terminal type



Wiring diagram



Approvals



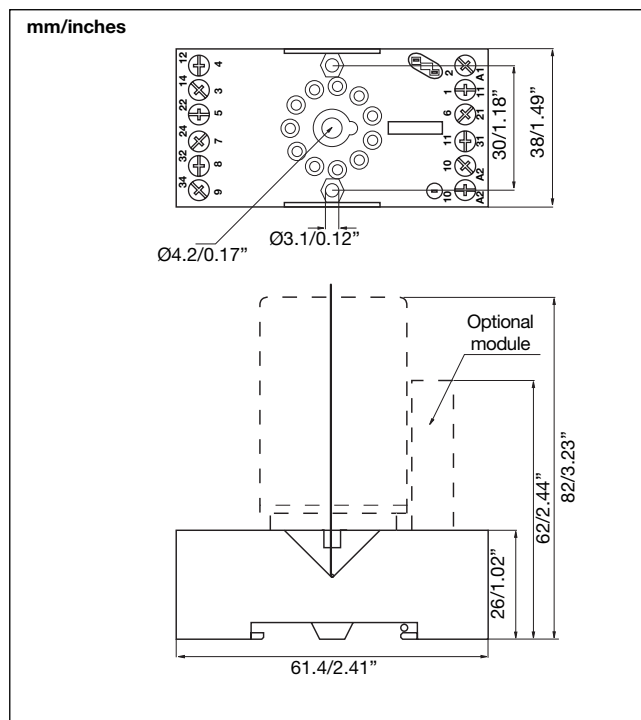
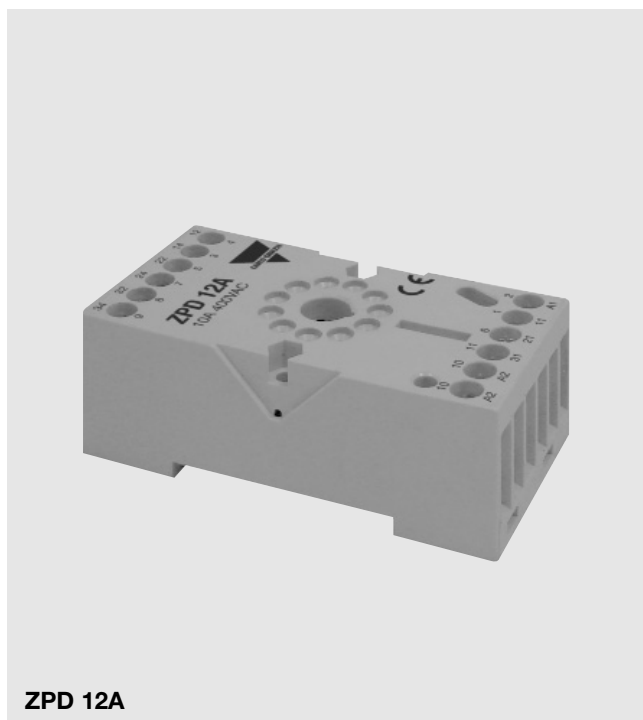
Ordering part number	ZPD9A
Box content:	10 sockets
Box size: (W 152 x D 155 x H 50) mm	Weight: 680g
(W 5.98 x D 6.10 x H 1.97) inches	Weight: 23.98oz

Optional Accessories (to be ordered separately if required)

Hold-down spring steel	SZPD56M (see on page 81)
Modules	(see on page 79)

Sockets for RCP relays

ZPD 12A

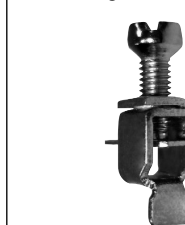


General data

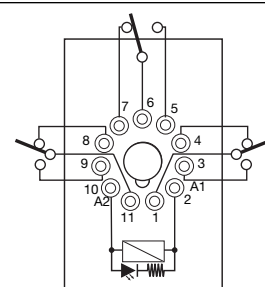
Rated voltage	400VAC
Rated current	10A
Insulation voltage	> 3kV
Protection degree	IP 20
Operating temperature range	-25° to +70°C (-13° to +158°F)
Socket material	PA66+GF (V0)
Socket colour	RAL 7035 / Pantone 1C
Terminal type	Screw cage
Screw type	M3 with combi head (slotted, Philips Gr.1, Pozi)
Maximum screw torque	1N/m
Max Wire section	2 x 2.5mm ² (14AWG)
Flex / compact wire	2 x 1.5mm ² (16AWG)
Cable End	
Contacts material	Nikel plated - CuZn33

Terminal type

Screw cage



Wiring diagram



Approvals



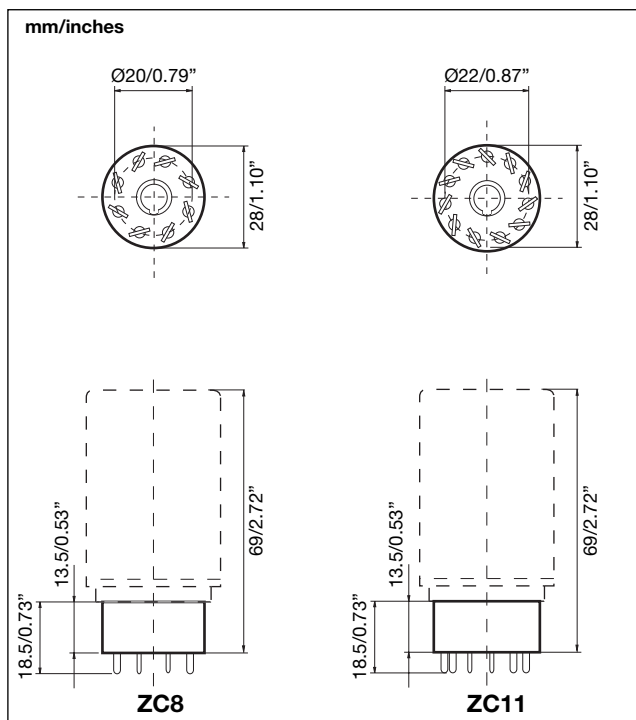
Ordering part number	ZPD12A
Box content:	10 sockets
Box size: (W 152 x D 155 x H 50) mm	Weight: 780g
(W 5.98 x D 6.10 x H 1.97) inches	Weight: 27.51oz

Optional Accessories (to be ordered separately if required)

Hold-down spring steel	SZPD56M (see on page 81)
Modules	(see on page 79)

Sockets for RCP relays

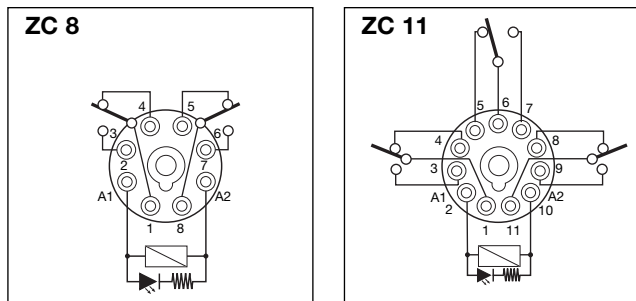
ZC 8 - ZC 11



General data

Rated voltage	300VAC
Rated current	10A
Insulation voltage	> 3kV
Protection degree	IP 00
Operating temperature range	-40° to +70°C (-40° to +150°F)
Socket material	PPEm
Socket colour	Black
Terminal type	PCB
Contacts material	Copper tin plated CuZn

Wiring diagram



Approvals



Ordering part number	ZC8/20.5
Ordering part number	ZC11/22
Box content:	100 sockets
Box size: (W 13 x D 21 x H 12.5) mm	ZC8 Weight: 880g
	ZC11 Weight: 1030g
(W 0.51 x D 0.83 x H 0.49) inches	ZC8 Weight: 31.04oz
	ZC11 Weight: 36.33oz

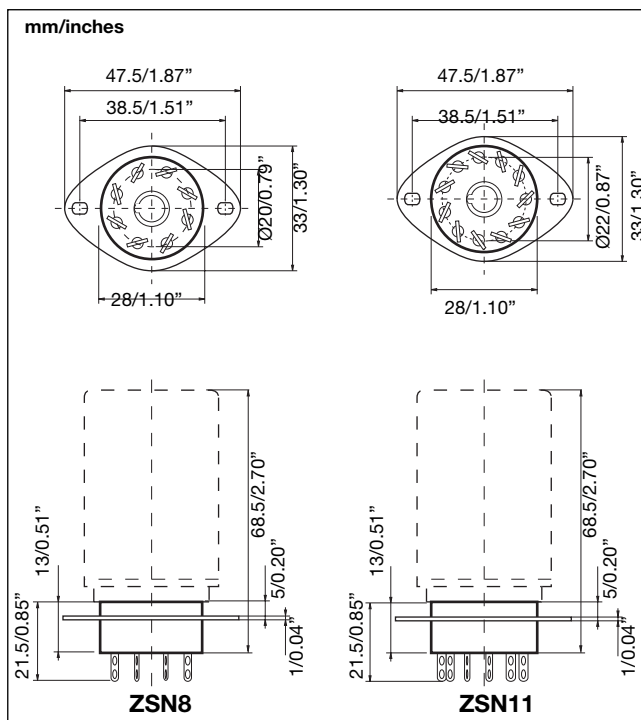
Sockets for RCP relays

ZSN 8 - ZSN 11



ZSN 8

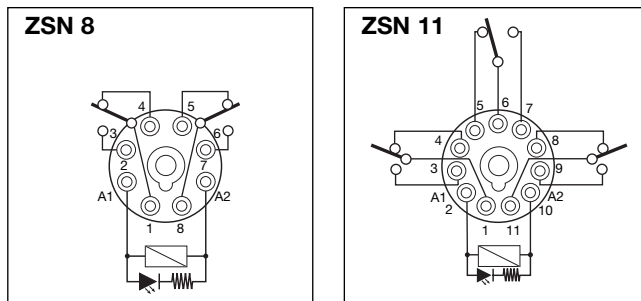
ZSN 11



General data

Rated voltage	300VAC
Rated current	10A
Insulation voltage	> 3kV
Protection degree	IP 00
Operating temperature range	-40° to +70°C (-40° to +150°F)
Socket material	Phenolic-Resin
Socket colour	Black
Flange material	Nickeled steel
Terminal type	Soldering Lug
Contacts material	Copper tin plated CuZn

Wiring diagram

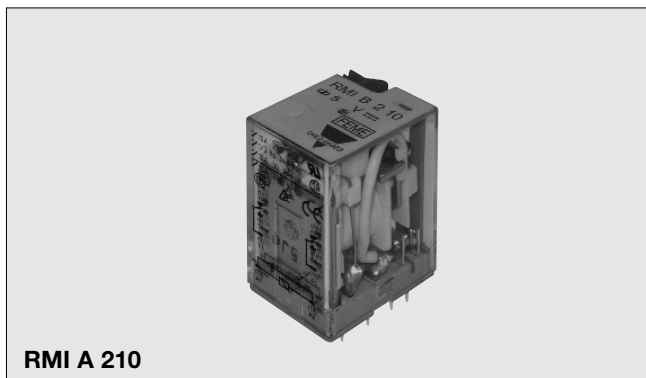


Approvals



Ordering part number	ZSN8
Ordering part number	ZSN11
Box content:	100 sockets
Box size: (W 13 x D 21 x H 12.5) mm	ZSN8 Weight: 1480g
(W 0.51 x D 0.83 x H 0.49) inches	ZSN11 Weight: 1700g
	ZSN8 Weight: 52.20oz
	ZSN11 Weight: 59.96oz

Midi Industrial Relay Type RMI. 2-10 10A High Inrush Monostable



- High switching power
- Small size
- Wide range of application
- 10A switching capacity
- 2 poles configuration
- AC coils 6V to 380V
- DC coils 6V to 240V
- Standard with LED, Push arm and Flag
- IP 40
- Compliant with the CE low voltage directive
- TÜV, UL, CSA, IMQ, RINA (marine) approved

Product Description

The RMI relay (relay mini-industrial) can be used for a wide range of industrial applications.

Available in 2 change-over contact configuration. PCB, solder and plug-in terminals.

Approvals



Ordering Key

RMI A 210 12DC /1

Type _____
Terminal version _____
Contact code _____
Coil code _____
Options _____

Terminal version: A = Soldering terminals
B = PCB terminals

Box content: 20 relays
Box size: (W 240 x D 105 x H 38) mm Weight: 680g
(W 9.45 x D 4.13 x H 1.50) inches Weight: 23.99oz

Type Selection

Contact configuration	Contact rating	Contact code
2 change over contacts (DPDT {2-form C})	10A	210

Coil Characteristics, DC 0.9W

Coil Code	Nominal voltage VDC	@ +20°C (+68°F)		Coil resistance Ω
		Pick-up voltage VDC Min.	Drop-out voltage DVC Min.	
6DC	6	4.5	0.6	40.0 ±10%
9DC	9	6.75	0.9	90 ±10%
12DC	12	9.0	1.2	160.0 ±10%
24DC	24	19.2	2.4	650.0 ±10%
36DC	36	25.0	3.6	1500.0 ±10%
48DC	48	38.4	4.8	2600.0 ±15%
100DC	100	80.0	10.0	11000.0 ±15%
110DC	110	88.0	11.0	11000.0 ±10%
220DC	220	165.0	22.0	42000.0 ±10%
240DC	240	180.0	24.0	64000.0 ±10%

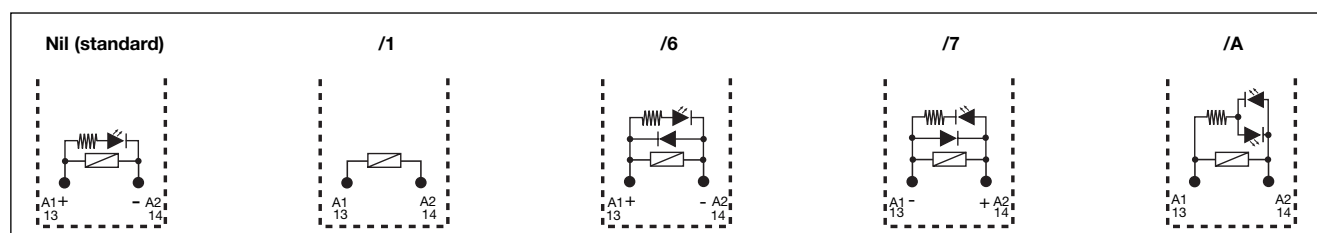
Coil Characteristics, AC 1.2VA

Coil Code	Nominal voltage VAC	@ +20°C (+68°F)		Coil resistance Ω
		Pick-up voltage VAC	Drop-out voltage VAC	
6AC	6	4.8	1.8	11.5 ±10%
12AC	12	9.6	3.6	40.0 ±10%
24AC	24	19.2	7.2	160.0 ±10%
36AC	36	28.8	10.8	370.0 ±10%
48AC	48	38.4	14.4	600.0 ±10%
110AC	110	88.0	33.0	3750.0 ±15%
120AC	120	96.0	36.0	3900.0 ±15%
220AC	220	176.0	66.0	13000.0 ±15%
240AC	240	192.0	72.0	18790.0 ±15%
380AC	380	304.0	114.0	42000.0 ±15%

Options

Nil = Standard with Push Arm -LED (A1+) (A2-) Flag
/1 = Without LED
/5 = Flash Gilded Contacts Au > 1µm

/6 = Free-Wheeling Diode (A1+) (A2-)
/7 = Free-Wheeling Diode (A1-) (A2+)
/A = Polarity free LED



Contact Characteristics

Contact rating (with resistive load)	10A - 250VAC / 30VDC	Current Max. switching current	10A
UL rating	10A - 250VAC / 30VDC 1/3HP @ 240VAC @ 60°C (160°F)	Min. applicable load	10mA @ 12VDC 1mA @ 6VDC
Max. rating (5x10 ⁴ ops)	10A - 250VAC / 30VDC	Max. inrush current	105A TV7 (according to UL1054)
Material	AgSn₂In₂O₃	Max. switch. voltage	250VAC / 30VDC @ 10A
Initial contact resistance	50mΩ (@ 1A 6VDC)	Max. switch. power	2500VA / 300W @ 10A
		Life Electrical life Mechanical life	1x10⁵ cycles (1800 Ops/h) 1x10⁷ cycles (1800 Ops/h)

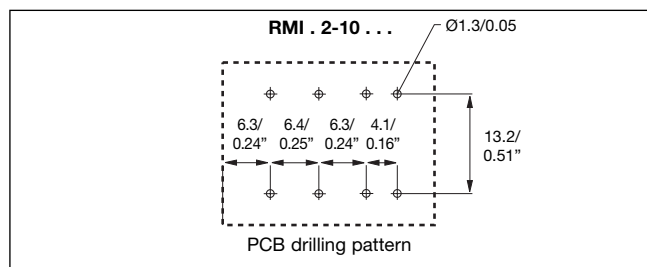
Insulation

Test Voltage (1 min.) Between coil and contacts Between open contacts Contact/Contact	2000VAC Vr.m.s 1000VAC Vr.m.s 1000VA Vr.m.s	Insulation according to EN61810-5 Rated insulation voltage Impulsive insulation voltage Pollution degree Overvoltage category	250V 3.6kV 2 III
Initial insulation resistance	1.000MΩ - 500VAC		

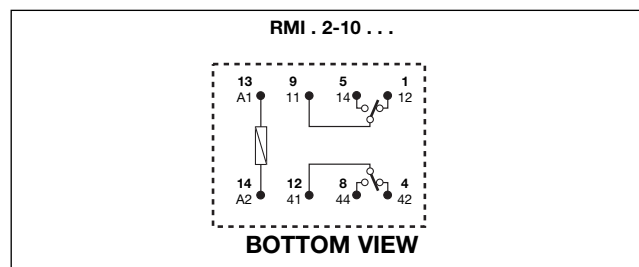
General Data

Nominal coil power	0.9W DC / 1.2VA AC	Voltage DIP	5ms before turning OFF
Operating time (At nominal voltage)	20ms max.	Shock resistance Functional Destructive	100m/s² /10g 11ms 1000m/s² /100g
Release time (At nominal voltage)	20ms max.	Humidity	35% to 95% RH non-condensing
Ambient temperature	-55° to +70°C (-67° to +158°F)	Terminals	PCB or Soldering Lugs (Plug-in)
Vibration resistance	10 to 55Hz 1.0mm (0.04")	Weight	~37g (~1.30oz)
Construction	Dust cover		

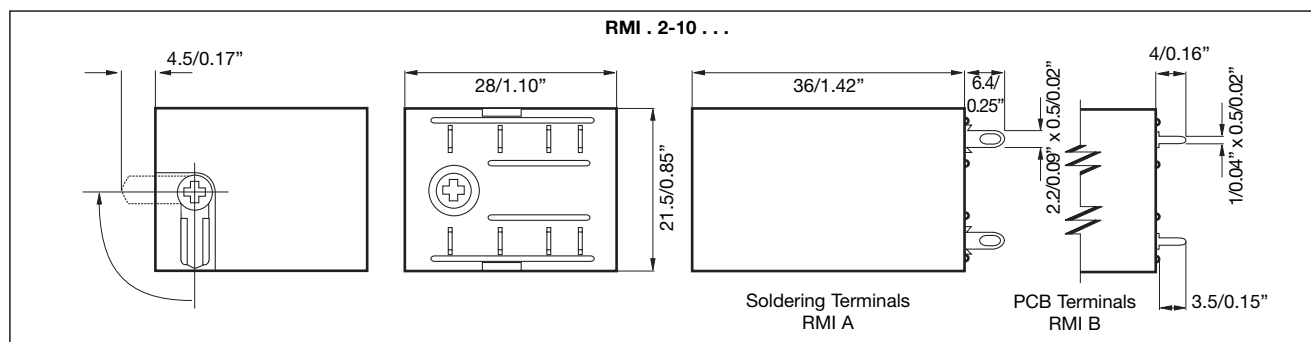
Pin View mm/inches



Wiring Diagram

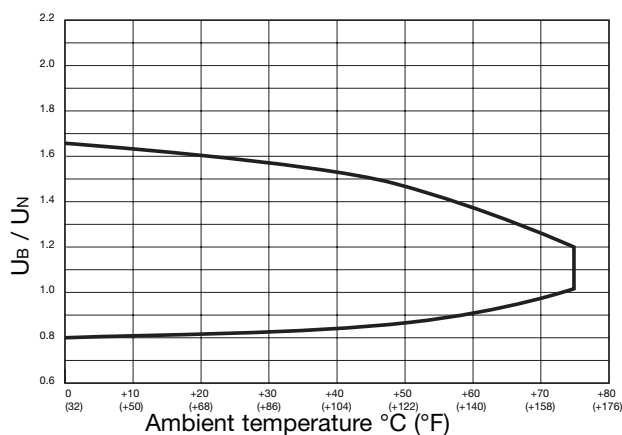


Dimensions mm/inches

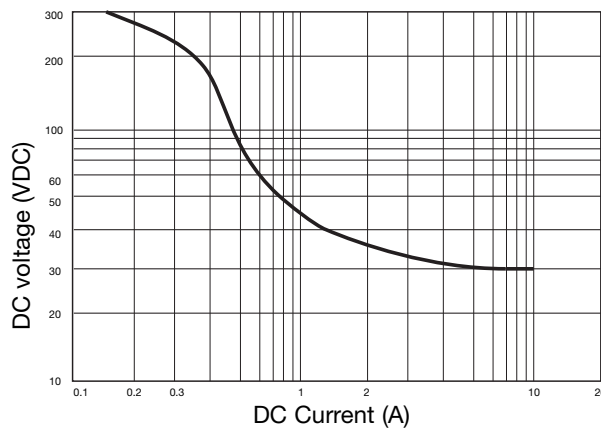


Diagrams

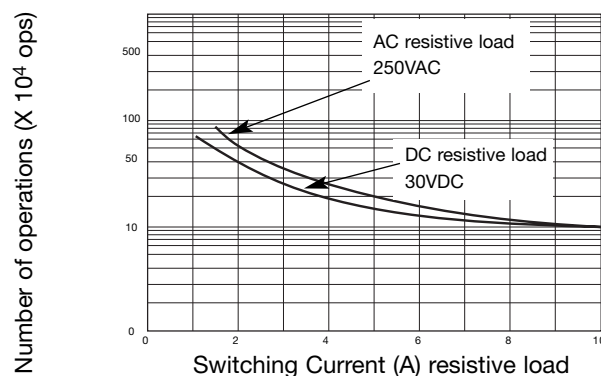
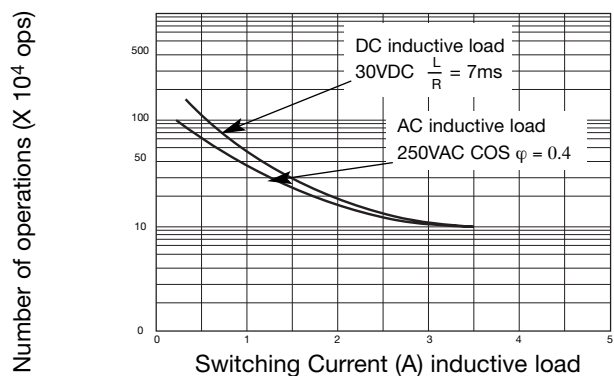
1 Coil Operating Range



2 Max. DC load breaking capacity



3 Electrical life



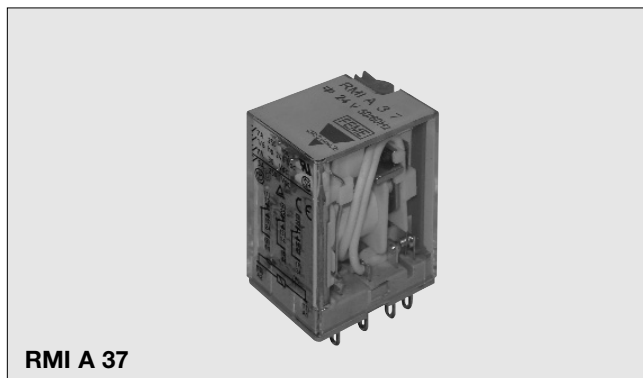
Bases and Sockets

DIN rail sockets codes are **ZMI2NA**, **ZMI4NA**, **ZMI2SA**, **ZMI4SA**, **ZMI2GA**, **ZMI4GA**, **ZR08** and **ZDM14A** details and specifications from page 41 to 44 of industrial relays catalogue.

PCB sockets codes are **ZC15/2A**, **ZC15/4A**, **ZC15/2** and **ZC15/4** details and specifications on page 46 of industrial relays catalogue.

Midi Industrial Relay Type RMI. 3-7 7A High Inrush Monostable

CARLO GAVAZZI



- High switching power
- Small size
- Wide range of application
- 7A switching capacity
- 3 poles configuration
- AC coils 6V to 380V
- DC coils 6V to 240V
- Standard with LED, Push arm and Flag
- IP 40
- Compliant with the CE low voltage directive
- TÜV, UL, CSA, IMQ approved

Product Description

The RMI relay (relay mini-industrial) can be used for a wide range of industrial applications.

Available in 3 change-over contact configuration. PCB, solder and plug-in terminals.

Ordering Key

RMI A 37 12DC /1

Type _____
Terminal version _____
Contact code _____
Coil code _____
Options _____

Terminal version: A = Soldering terminals
B = PCB terminals

Box content: 20 relays
Box size: (W 240 x D 105 x H 38) mm Weight: 680g
(W 9.45 x D 4.13 x H 1.50) inches Weight: 23.99oz

Approvals



Type Selection

Contact configuration	Contact rating	Contact code
3 change over contacts (DPDT {2-form C})	7A	37

Coil Characteristics, DC 0.9W

Coil Code	Nominal voltage VDC	@ +20°C (+68°F)		Coil resistance Ω
		Pick-up voltage VDC	Drop-out voltage DVC	
5DC	5	3.75	0.5	27.5 ±10%
6DC	6	4.5	0.6	40.0 ±10%
9DC	9	6.75	0.9	90 ±10%
12DC	12	9.0	1.2	160.0 ±10%
24DC	24	19.2	2.4	650.0 ±10%
36DC	36	25.0	3.6	1500.0 ±10%
48DC	48	38.4	4.8	2600.0 ±15%
60DC	60	48.0	6.0	11000.0 ±15%
110DC	110	88.0	11.0	11000.0 ±10%
220DC	220	165.0	22.0	42000.0 ±10%
240DC	240	180.0	24.0	64000.0 ±10%

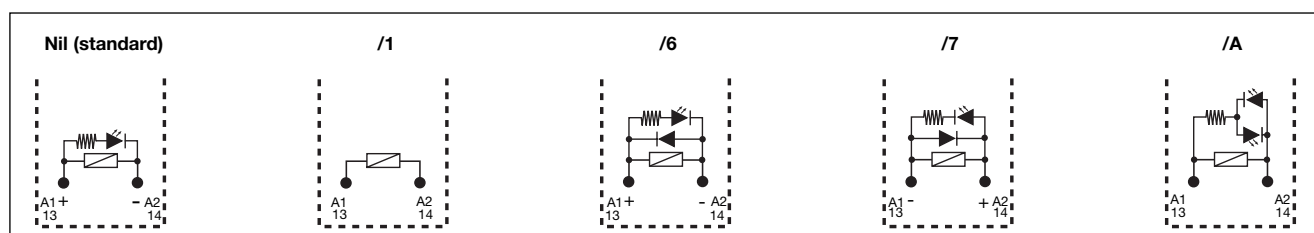
Coil Characteristics, AC 1.2VA

Coil Code	Nominal voltage VAC	@ +20°C (+68°F)		Coil resistance Ω
		Pick-up voltage VAC	Drop-out voltage VAC	
6AC	6	4.8	1.8	11.5 ±10%
12AC	12	9.6	3.6	40.0 ±10%
24AC	24	19.2	7.2	160.0 ±10%
36AC	36	28.8	10.8	370.0 ±10%
48AC	48	38.4	14.4	600.0 ±10%
110AC	110	88.0	33.0	3750.0 ±15%
120AC	120	96.0	36.0	3900.0 ±15%
220AC	220	176.0	66.0	13000.0 ±15%
240AC	240	192.0	72.0	18790.0 ±15%
380AC	380	304.0	114.0	42000.0 ±15%

Options

Nil = Standard with Push Arm -LED (A1+) (A2-) - Flag
/1 = Without LED
/5 = Flash Gilded Contacts Au > 1µm

/6 = Free-Wheeling Diode (A1+) (A2-)
/7 = Free-Wheeling Diode (A1-) (A2+)
/A = Polarity free LED



Contact Characteristics

Contact rating (with resistive load)	7A - 250VAC / 30VDC	Max. inrush current	78A TV5 (according to UL1054)
UL rating	5A - 250VAC / 30VDC 1/6HP @ 240VAC @ 60°C (160°F)	Max. switch. voltage	250VAC / 30VDC @ 7A
Max. rating (5x10 ⁴ ops)	7A - 250VAC / 30VDC	Max. switch. power	2500VA / 300W @ 7A
Material	AgSn₂In₂O₃	Life	
Minimum Current Min. applicable load /5 version	10mA @ 12VDC 1mA @ 6VDC	Electrical life	1x10⁵ cycles (1800 Ops/h)
		Mechanical life	1x10⁷ cycles (1800 Ops/h)

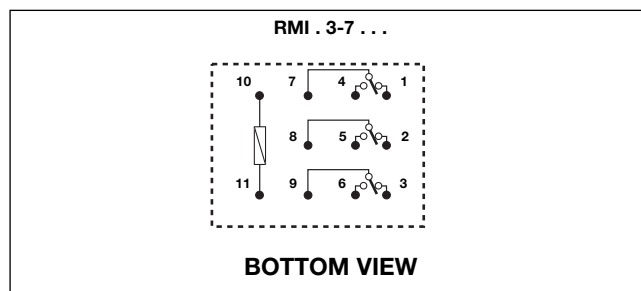
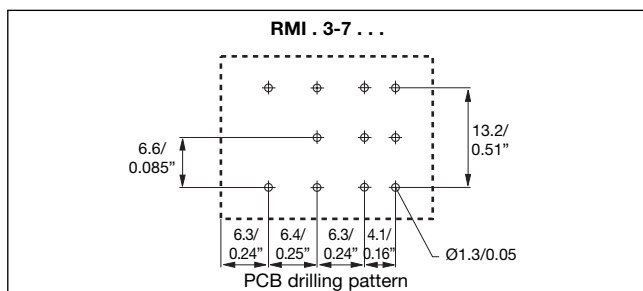
Insulation

Test Voltage (1 min.) Between coil and contacts Between open contacts Contact/Contact	2000VAC Vr.m.s 1000VAC Vr.m.s 1000VA Vr.m.s	Insulation according to EN61810-5 Rated insulation voltage Impulsive insulation voltage Pollution degree Overvoltage category	250V 3.6kV 2 III
Initial insulation resistance	1.000MΩ - 500VAC		

General Data

Nominal coil power	0.9W DC / 1.2VA AC	Shock resistance	
Operating time (At nominal voltage)	20ms max.	Functional	100m/s² / 10g 11ms
Release time (At nominal voltage)	20ms max.	Destructive	1000m/s² / 100g
Ambient temperature	-55° to +70°C (-67° to +158°F)	Humidity	35% to 95% RH non-condensing
Vibration resistance	10 to 55Hz 1.0mm (0.04")	Terminals	PCB or Soldering Lugs (Plug-in)
Construction	Dust cover	Weight	~37g (~1.30oz)

Wiring Diagram



Technical drawing of RMI . 3-7 ... showing three views: front, top, and side. The front view shows a rectangular component with a central circular feature and a crosshair. The top view shows a rectangular component with a grid of 12 small rectangular features. The side view shows the component's profile with dimensions for the top, bottom, and side edges. Dimensions are given in inches and millimeters.

Dimensions:

- Front View: 4.5/0.17"
- Top View: 28/1.10", 21.5/0.85"
- Side View: 36/1.42", 6.4/0.25", 2.2/0.09" x 0.5/0.02", 4/0.16", 1/0.04" x 0.5/0.02", 3.5/0.15"

Labels:

- Soldering Terminals RMI A
- PCB Terminals RMI B

Diagrams

Ambient temperature °C (°F)	Top Curve (U_B / U_N)	Bottom Curve (U_B / U_N)
0 (32)	1.65	0.78
+10 (+50)	1.62	0.79
+20 (+68)	1.58	0.80
+30 (+86)	1.55	0.81
+40 (+104)	1.50	0.83
+50 (+122)	1.45	0.86
+60 (+140)	1.35	0.92
+70 (+158)	1.25	1.00
+75 (+167)	1.15	1.15

The graph shows the DC voltage regulation of the 100W power supply. The y-axis represents DC voltage (VDC) on a logarithmic scale from 10 to 300. The x-axis represents DC Current (A) on a logarithmic scale from 0.1 to 20. The curve starts at approximately 300VDC at 0.1A, drops sharply to about 40VDC at 1A, and then levels off to approximately 30VDC at 10A.

DC Current (A)	DC voltage (VDC)
0.1	300
0.2	250
0.3	200
0.5	100
1.0	40
2.0	35
5.0	32
10.0	30

Number of operations ($\times 10^4$ ops)

DC inductive load
30VDC $\frac{L}{R} = 7\text{ms}$

AC inductive load
250VAC $\cos \varphi = 0.4$

Switching Current (A) inductive load

The graph plots the 'Number of operations (X 10⁴ ops)' on the y-axis against the 'Switching Current (A) resistive load' on the x-axis. The y-axis is logarithmic, with major ticks at 10, 50, 100, and 500. The x-axis is linear, ranging from 0 to 10 with major ticks every 2 units. Two curves are shown: an upper curve for 'AC resistive load 250VAC' and a lower curve for 'DC resistive load 30VDC'. Both curves show a decreasing trend as switching current increases.

Switching Current (A)	AC resistive load 250VAC (X 10 ⁴ ops)	DC resistive load 30VDC (X 10 ⁴ ops)
1	~80	~60
2	~40	~30
3	~25	~20
4	~18	~15
6	~12	~11
8	~10	~10

Bases and Sockets

Specifications are subject to change without notice. Pictures are just an example. For special features and/or customization, please ask to our sales network. 011010

Midi Industrial Relay Type RMI. 4-5 5A High Inrush Monostable



- High switching power
- Small size
- Wide range of application
- 5A switching capacity
- 4 poles configuration
- AC coils 6V to 380V
- DC coils 6V to 240V
- Standard with LED, Push arm and Flag
- IP 40
- Complain with the CE low voltage directive
- TÜV, UL, CSA, IMQ, RINA (marine) approved

Product Description

The RMI relay (relay mini-industrial) can be used for a wide range of industrial applications.

Available in 4 change-over contact configuration. PCB, solder and plug-in terminals.

Approvals



Ordering Key

RMI A 45 12DC /1

Type _____
Terminal version _____
Contact code _____
Coil code _____
Options _____

Terminal version: A = Soldering terminals
B = PCB terminals

Box content: 20 relays
Box size: (W 240 x D 105 x H 38) mm Weight: 680g
(W 9.45 x D 4.13 x H 1.50) inches Weight: 23.99oz

Type Selection

Contact configuration	Contact rating	Contact code
4 change over contacts (4PDT {4-form C})	5A	45

Coil Characteristics, DC 0.9W

Coil Code	Nominal voltage VDC	@ +20°C (+68°F)		Coil resistance Ω
		Pick-up voltage VDC Min.	Drop-out voltage VDC Min.	
6DC	6	4.5	0.6	40.0 ±10%
9DC	9	6.75	0.9	90 ±10%
12DC	12	9.0	1.2	160.0 ±10%
24DC	24	19.2	2.4	650.0 ±10%
36DC	36	25.0	3.6	1500.0 ±10%
48DC	48	38.4	4.8	2600.0 ±15%
100DC	100	80.0	10.0	11000.0 ±15%
110DC	110	88.0	11.0	11000.0 ±10%
220DC	220	165.0	22.0	42000.0 ±10%
240DC	240	180.0	24.0	64000.0 ±10%

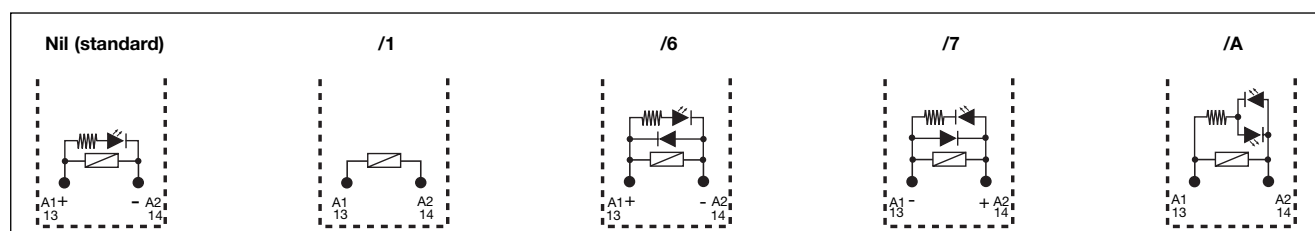
Coil Characteristics, AC 1.2VA

Coil Code	Nominal voltage VAC	@ +20°C (+68°F)		Coil resistance Ω
		Pick-up voltage VAC	Drop-out voltage VAC	
6AC	6	4.8	1.8	11.5 ±10%
12AC	12	9.6	3.6	40.0 ±10%
24AC	24	19.2	7.2	160.0 ±10%
36AC	36	28.8	10.8	370.0 ±10%
48AC	48	38.4	14.4	600.0 ±10%
110AC	110	88.0	33.0	3750.0 ±15%
120AC	120	96.0	36.0	3900.0 ±15%
220AC	220	176.0	66.0	13000.0 ±15%
240AC	240	192.0	72.0	18790.0 ±15%
380AC	380	304.0	114.0	42000.0 ±15%

Options

Nil = Standard with Push Arm -LED (A1+) (A2-) Flag
/1 = Without LED
/5 = Flash Gilded Contacts Au > 1µm

/6 = Free-Wheeling Diode (A1+) (A2-)
/7 = Free-Wheeling Diode (A1-) (A2+)
/A = Polarity free LED



Contact Characteristics

Contact rating (with resistive load)	5A - 250VAC	Initial contact resistance	50mΩ (@ 1A 6VDC)
UL rating	5A - 250VAC/30VDC 1/6HP @ 240VAC @ 60°C (160°F)	Max. inrush current	51A TV3 (according to UL1054)
Max. rating (5x10 ⁴ ops)	5A - 250VAC / 30VDC	Max. switch. voltage	250VAC / 30VDC @ 5A
Material	AgSn₂In₂O₃	Max. switch. power	1250VA / 150W @ 5A
Minimum Current Min. applicable load /5 version	10mA @ 12VDC 1mA @ 6VDC	Life Electrical life Mechanical life	1x10⁵ cycles (1800 Ops/h) 1x10⁷ cycles (1800 Ops/h)

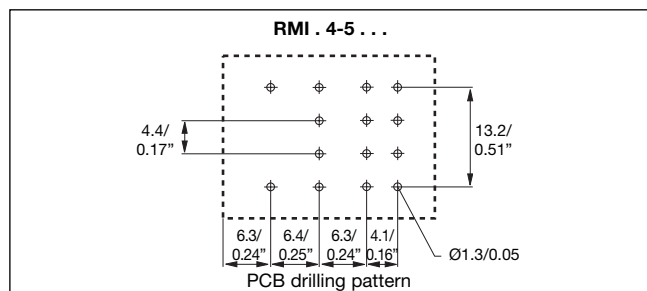
Insulation

Test Voltage (1 min.) Between coil and contacts Between open contacts Contact/Contact	2000VAC Vr.m.s 1000VAC Vr.m.s 1000VA Vr.m.s	Insulation according to EN61810-5 Rated insulation voltage Impulsive insulation voltage Pollution degree Overvoltage category	250V 3.6kV 2 III
Initial insulation resistance	1.000MΩ - 500VAC		

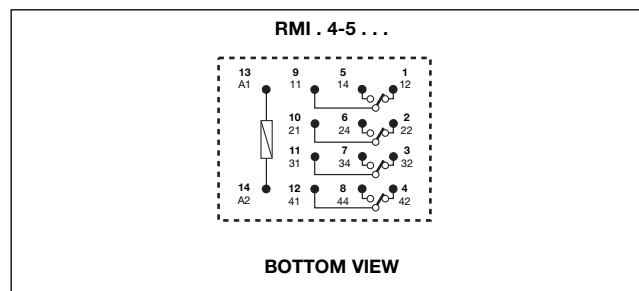
General Data

Nominal coil power	0.9W DC / 1.2VA AC	Shock resistance Functional Destructive	100m/s² /10g 1000m/s² /100g
Operating time (At nominal voltage)	25ms max.	Humidity	35% to 95% RH non-condensing
Release time (At nominal voltage)	25ms max.	Terminals	PCB or Soldering Lugs (Plug-in)
Ambient temperature	-55° to +70°C (-67° to +158°F)	Weight	~37g (~1.30oz)
Vibration resistance	10 to 55Hz 1.5mm (0.06")		
Construction	Dust cover		

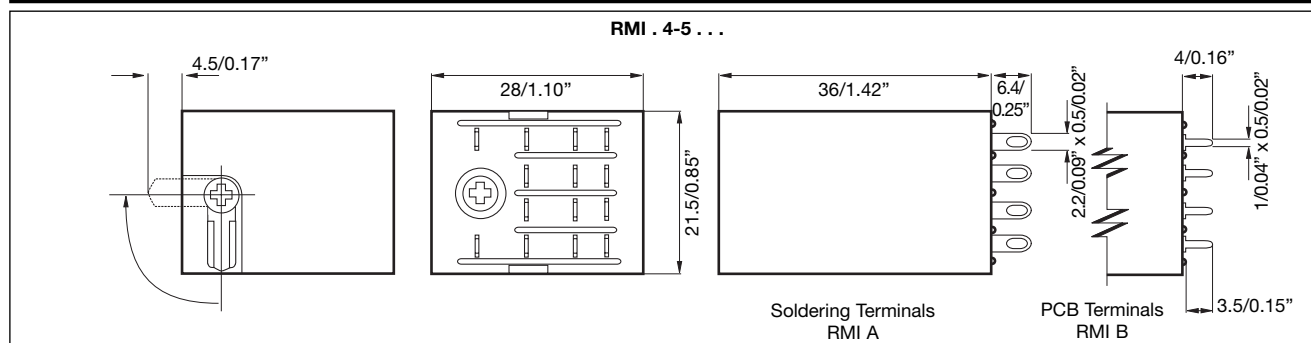
Pin View mm/inches



Wiring Diagram

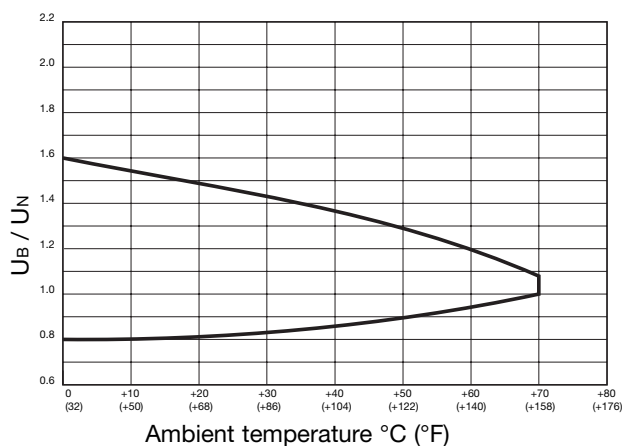


Dimensions mm/inches

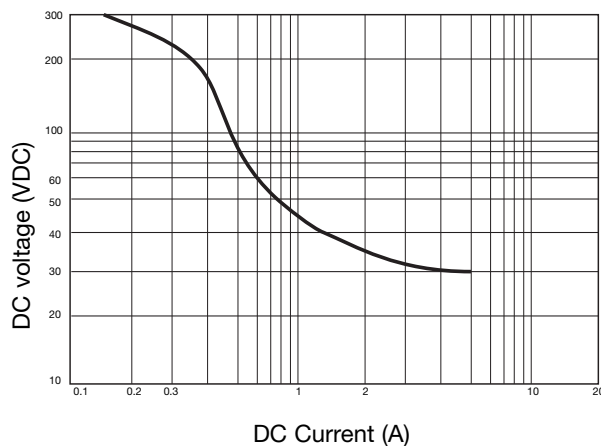


Diagrams

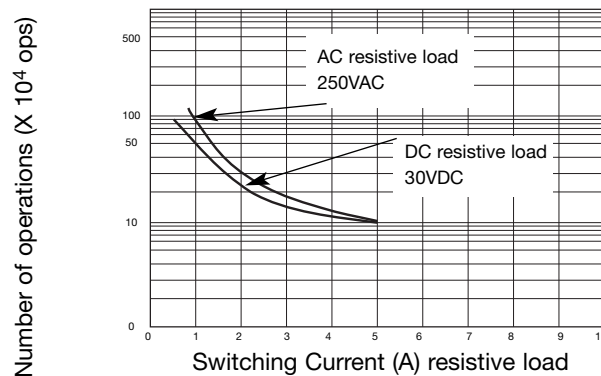
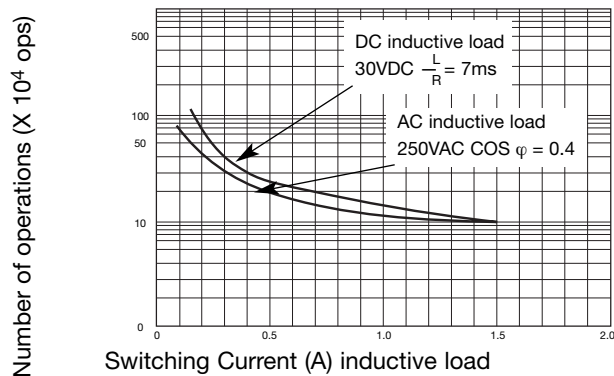
1 Coil Operating Range



2 Max. DC load breaking capacity



3 Electrical life

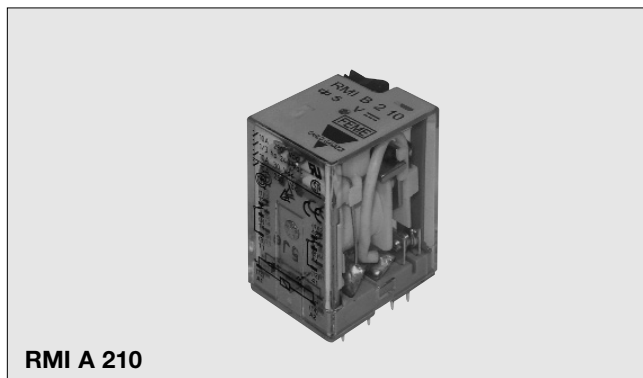


Bases and Sockets

DIN rail sockets codes are **ZMI4NA**, **ZMI4SA**, **ZMI4GA** and **ZDM14A** details and specifications from page 41 to 44 of industrial relays catalogue.
PCB sockets codes are **ZC15/4A** and **ZC15/4** details and specifications on page 46 of industrial relays catalogue.

Midi Industrial Relay Type RMI. 2-10 10A Monostable

CARLO GAVAZZI



- High switching power
- Small size
- 2 poles configuration
- AC coils 6 to 230VAC
- DC coils 5 to 110VDC
- 3750VAC dielectric coil to contacts
- Standard with LED, Push with arm and Flag
- IP 40
- Compliant with the CE low voltage directive
- TÜV, UL, CSA, IMQ approved

Product Description

The RMI relay (relay mini-industrial) can be used for a wide range of industrial applications.

Available in 2 change-over contact configuration. PCB, solder and plug-in terminals.

Ordering Key

RMI A 210 12VDC /1

Type _____
Terminal version _____
Contact code _____
Coil code _____
Options _____

Terminal version: A = Soldering terminals
B = PCB terminals

Approvals



Box content: 25 relays
Box size: (W 125 x D 165 x H 50) mm Weight: 850g
(W 4.92 x D 6.50 x H 1.97) inches Weight: 29.98oz

Type Selection

Contact configuration	Contact rating	Contact code
2 change over contacts (DPDT {2-form C})	10A	210

Coil Characteristics, DC 0.9W

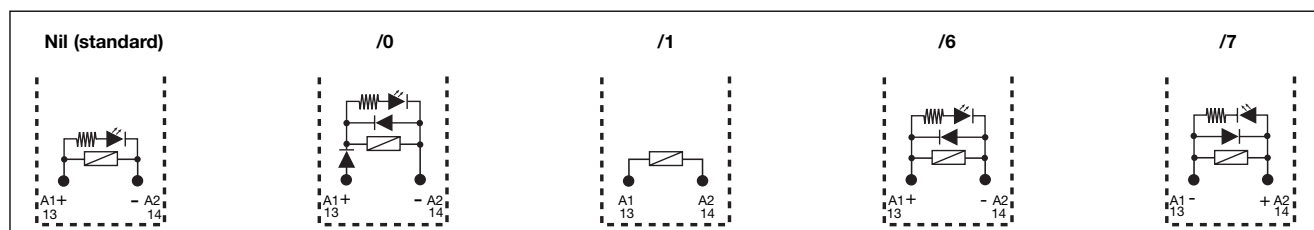
Coil Code	Nominal voltage VDC	@ +20°C (+68°F)		Coil resistance Ω
		Pick-up voltage VDC	Drop-out voltage DVC	
5VDC	5	4.0	0.5	27.5 ±10%
6VDC	6	4.8	0.6	40.0 ±10%
12VDC	12	9.6	1.2	160.0 ±10%
24VDC	24	19.2	2.4	650.0 ±10%
48VDC	48	38.4	4.8	2600.0 ±15%
60VDC	60	48.0	6.0	11000.0 ±15%
110VDC	110	88.0	11.0	11000.0 ±15%

Coil Characteristics, AC 1.2VA

Coil Code	Nominal voltage VAC	@ +20°C (+68°F)		Coil resistance Ω
		Pick-up voltage VAC	Drop-out voltage VAC	
6VAC	6	4.8	1.8	40.0 ±10%
12VAC	12	9.6	3.6	160.0 ±10%
24VAC	24	19.2	7.2	650.0 ±10%
48VAC	48	38.4	14.4	2600.0 ±10%
115/120VAC	110-120	96.0	36.0	11000.0 ±15%
230VAC	220-240	176.0	66.0	11000.0 ±15%

Options

Nil = Standard with Push Arm -LED (A1+) (A2-) - Flag
/0 = Diode against polarity reverse + free-wheeling Diode (A1+) (A2-)
/1 = Without LED
/2 = Without Flag
/3 = Without Push Arm
/4 = Plated Contacts Au > 5µm
/5 = Flash Gilded Contacts Au > 1µm
/6 = Free-Wheeling Diode (A1+) (A2-)
/7 = Free-Wheeling Diode (A1-) (A2+)



Contact Characteristics

Contact rating (with resistive load)	10A - 250VAC / 30VDC	Minimum Current Min. applicable load /4 and /5 versions	5mA @ 12VDC 1mA @ 6VDC
UL rating	10A - 250VAC / 30VDC 1/3HP @ 240VAC	Max. switch. voltage	250VAC / 30VDC @ 10A
Max. rating	10A - 250VAC / 30VDC	Max. switch. power	2500VA / 300W @ 10A
Material	AgCe	Life Electrical life Mechanical life	1x10⁵ cycles (1800 Ops/h) 1x10⁷ cycles (1800 Ops/h)
Initial contact resistance	50mΩ (@ 1A 6VDC)		

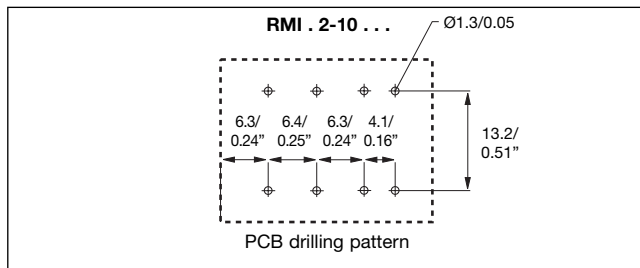
Insulation

Test Voltage (1 min.) Between coil and contacts Between open contacts Contact/Contact	3750VAC Vr.m.s 750VAC Vr.m.s 1250VA Vr.m.s	Insulation according to EN61810-5 Rated insulation voltage Impulsive insulation voltage Pollution degree Overvoltage category	250V 3.6kV 2 III
Initial insulation resistance	1.000MΩ - 500VAC		

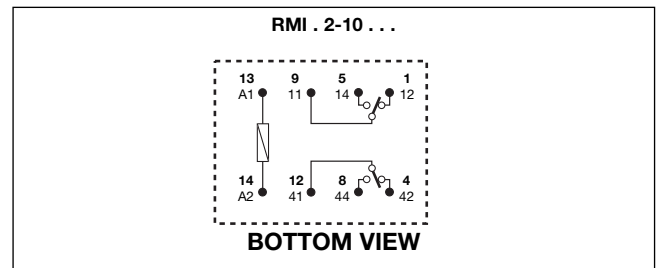
General Data

Nominal coil power	0.9W DC / 1.2VA AC	Shock resistance Functional Destructive	100m/s² / 10g 11ms 1000m/s² / 100g
Operating time (At nominal voltage)	20ms max.	Humidity	35% to 95% RH non-condensing
Release time (At nominal voltage)	20ms max.	Terminals	PCB or Soldering Lugs (Plug-in)
Ambient temperature	-55° to +70°C (-67° to +158°F)	Weight	~37g (~1.30oz)
Vibration resistance	10 to 55Hz 1.0mm (0.04")		
Construction	Dust cover		

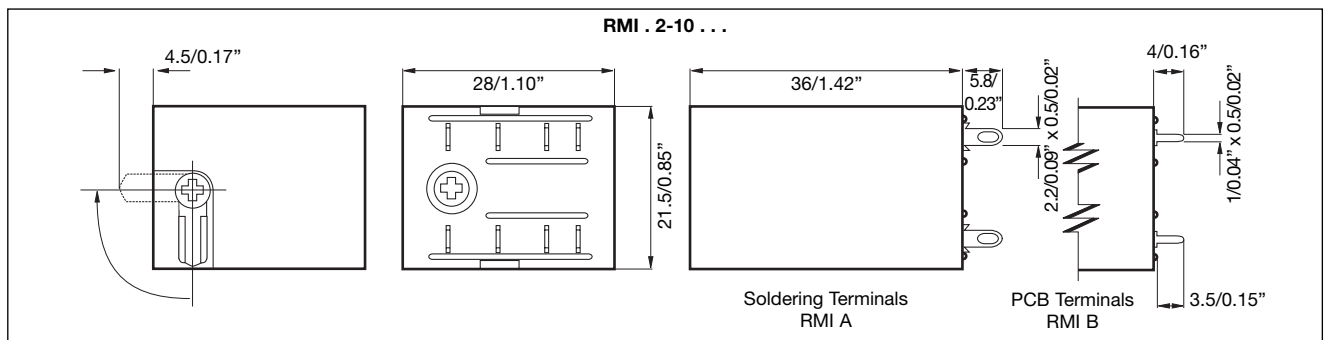
Pin View mm/inches



Wiring Diagram

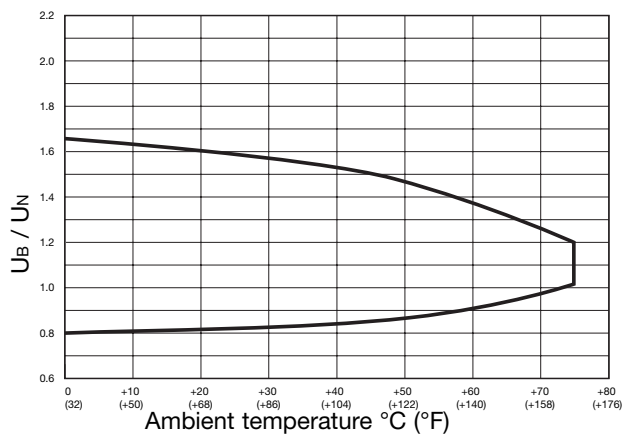


Dimensions mm/inches

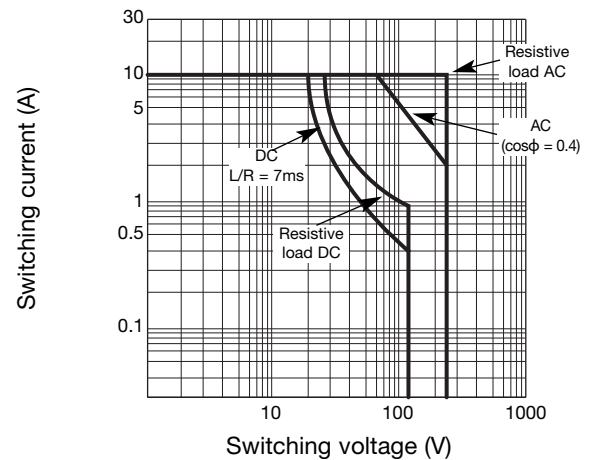


Diagrams

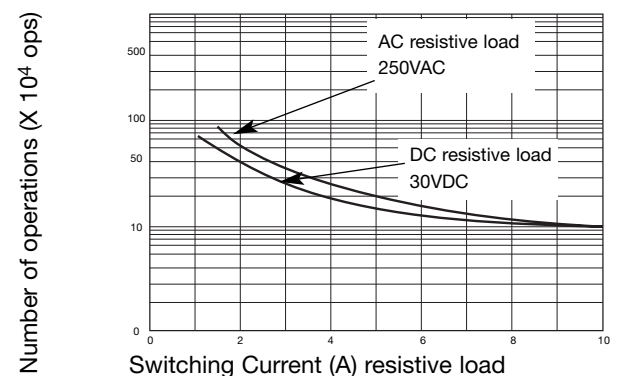
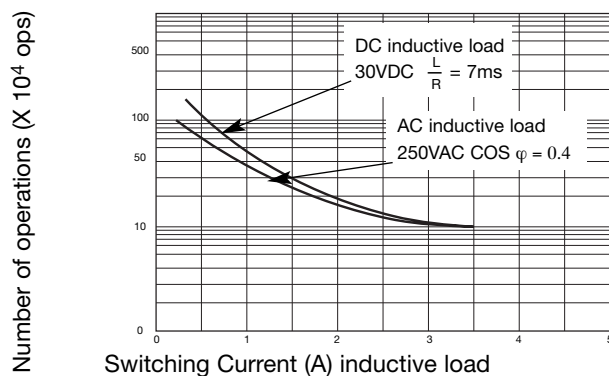
1 Coil Operating Range



Max. switching current



3 Electrical life



Bases and Sockets

DIN rail sockets codes are **ZMI2NA**, **ZMI4NA**, **ZMI2SA**, **ZMI4SA**, **ZMI2GA**, **ZMI4GA**, **ZR08** and **ZDM14A** details and specifications from page 41 to 44 of industrial relays catalogue.

PCB sockets codes are **ZC15/2A**, **ZC15/4A**, **ZC15/2** and **ZC15/4** details and specifications on page 46 of industrial relays catalogue.

Specifications are subject to change without notice. Pictures are just an example. For special features and/or customization, please ask to our sales network. 011010

Midi Industrial Relay Type RMI. 4-5 5A Monostable



- High switching power
- Small size
- 4 poles configuration
- AC coils 6 to 230VAC
- DC coils 5 to 110VDC
- 3750VAC dielectric coil to contacts
- Standard with LED, Push with arm and Flag
- IP 40
- Complain with the CE low voltage directive
- TÜV, UL, CSA, IMQ approved

Product Description

The RMI relay (relay mini-industrial) can be used for a wide range of industrial applications.

Available in 4 change-over contact configuration. PCB, solder and plug-in terminals.

Approvals



Ordering Key

RMI A 45 12VDC /1

Type _____
Terminal version _____
Contact code _____
Coil code _____
Options _____

Terminal version: A = Soldering terminals
B = PCB terminals

Box content: 25 relays
Box size: (W 125 x D 165 x H 50) mm Weight: 850g
(W 4.92 x D 6.50 x H 1.97) inches Weight: 29.98oz

Type Selection

Contact configuration	Contact rating	Contact code
4 change over contacts (4PDT {4-form C})	5A	45

Coil Characteristics, DC 0.9W

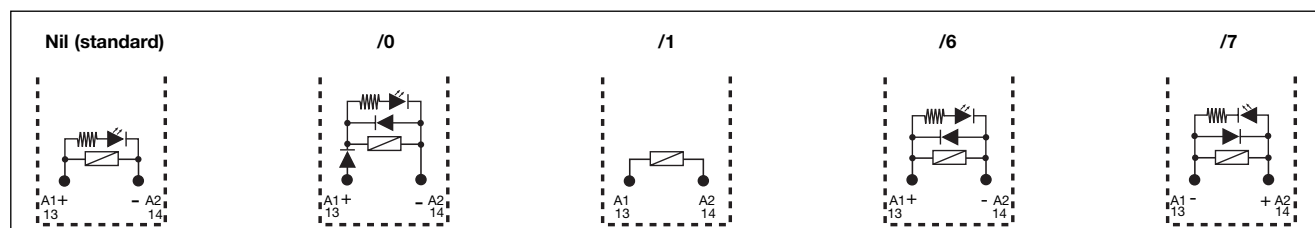
Coil Code	Nominal voltage VDC	@ +20°C (+68°F)		Coil resistance Ω
		Pick-up voltage VDC	Drop-out voltage VDC	
5VDC	5	4.0	0.5	27.5 ±10%
6VDC	6	4.8	0.6	40.0 ±10%
12VDC	12	9.6	1.2	160.0 ±10%
24VDC	24	19.2	2.4	650.0 ±10%
48VDC	48	38.4	4.8	2600.0 ±15%
60VDC	60	48.0	6.0	11000.0 ±15%
110VDC	110	88.0	11.0	11000.0 ±15%

Coil Characteristics, AC 1.2VA

Coil Code	Nominal voltage VAC	@ +20°C (+68°F)		Coil resistance Ω
		Pick-up voltage VAC	Drop-out voltage VAC	
6VAC	6	4.8	1.8	40.0 ±10%
12VAC	12	9.6	3.6	160.0 ±10%
24VAC	24	19.2	7.2	650.0 ±10%
48VAC	48	38.4	14.4	2600.0 ±10%
115/120VAC	110-120	96.0	36.0	11000.0 ±15%
230VAC	220-240	176.0	66.0	11000.0 ±15%

Options

Nil = Standard with Push Arm -LED (A1+) (A2-) Flag
/0 = Diode against polarity reverse + free-wheeling Diode (A1+) (A2-)
/1 = Without LED
/2 = Without Flag
/3 = Without Push Arm
/4 = Plated Contacts Au > 5µm
/5 = Flash Gilded Contacts Au > 1µm
/6 = Free-Wheeling Diode (A1+) (A2-)
/7 = Free-Wheeling Diode (A1-) (A2+)



Contact Characteristics

Contact rating (with resistive load)	5A - 250VAC	Minimum Current Min. applicable load /4 and /5 versions	5mA @ 12VDC 1mA @ 6VDC
UL rating	5A - 250VAC/30VDC 1/6HP @ 240VAC	Initial contact resistance	50mΩ (@ 1A 6VDC)
Usually rating (1x10 ⁵ ops)	5A - 250VAC / 30VDC	Max. switch. voltage	250VAC / 30VDC @ 5A
Max. rating (5x10 ⁴ ops)	5A - 250VAC / 30VDC	Max. switch. power	1250VA / 150W @ 5A
Material	AgCe	Life Electrical life Mechanical life	1x10⁵ cycles (1800 Ops/h) 1x10⁷ cycles (1800 Ops/h)

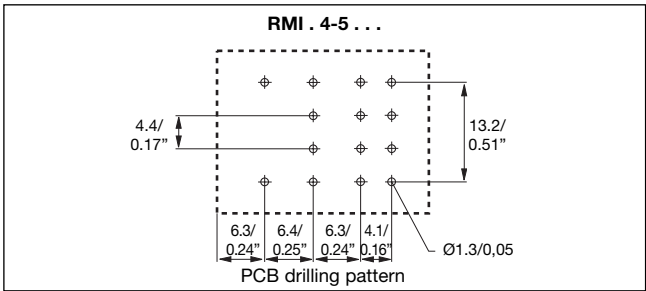
Insulation

Test Voltage (1 min.) Between coil and contacts Between open contacts Contact/Contact	3750VAC Vr.m.s 750VAC Vr.m.s 1250VA Vr.m.s	Insulation according to EN61810-5 Rated insulation voltage Impulsive insulation voltage Pollution degree Overvoltage category	250V 2.2kV 2 II
Initial insulation resistance	1.000MΩ - 500VAC		

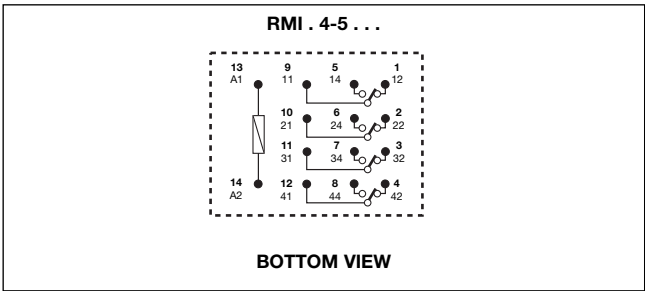
General Data

Nominal coil power	0.9W DC / 1.2VA AC	Shock resistance Funktional Destructive	100m/s² /10g 1000m/s² /100g
Operating time (At nominal voltage)	25ms max.	Humidity	35% to 95% RH non-condensing
Release time (At nominal voltage)	25ms max.	Terminals	PCB or Soldering Lugs (Plug-in)
Ambient temperature	-55° to +70°C (-67° to +158°F)	Weight	~37g (~1.30oz)
Vibration resistance	10 to 55Hz 1.5mm (0.06")		
Construction	Dust cover		

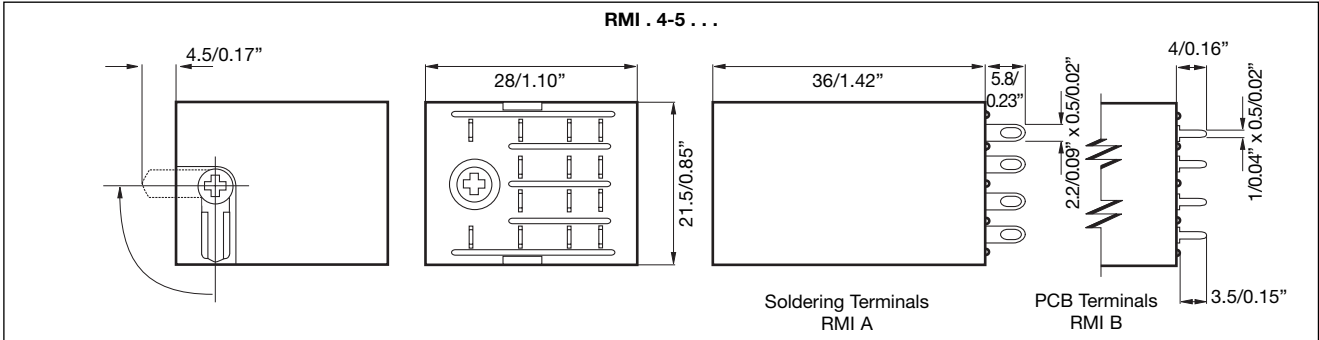
Pin View mm/inches



Wiring Diagram

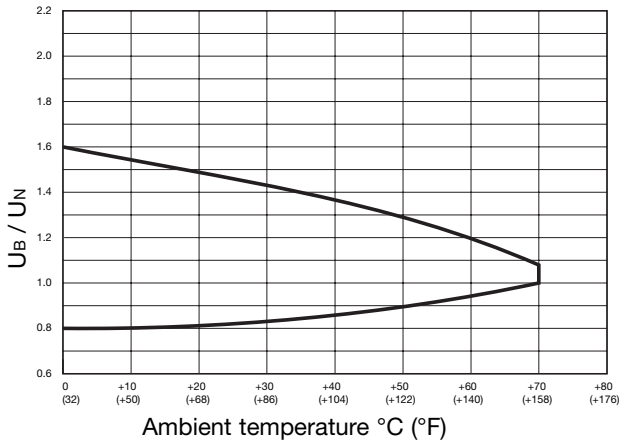


Dimensions mm/inches

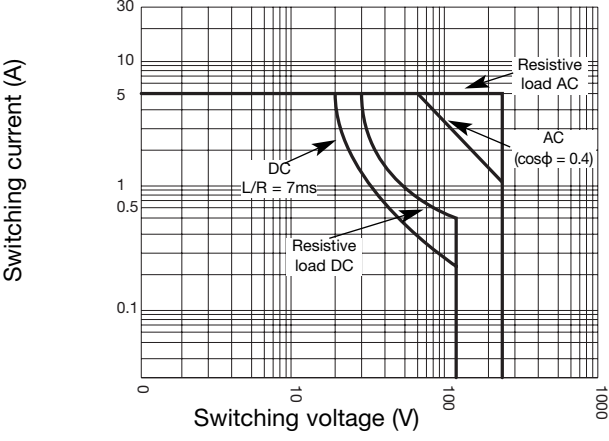


Diagrams

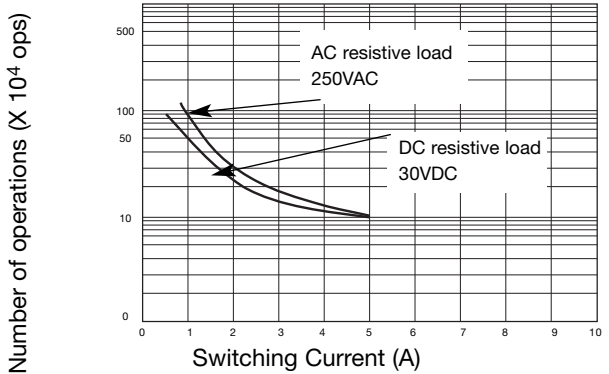
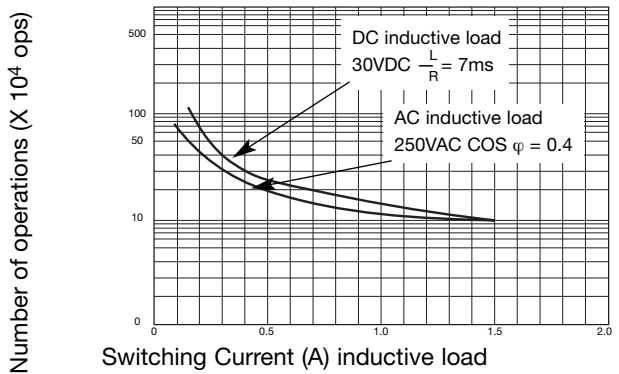
1 Coil Operating Range



2 Max. DC load breaking capacity



3 Electrical life

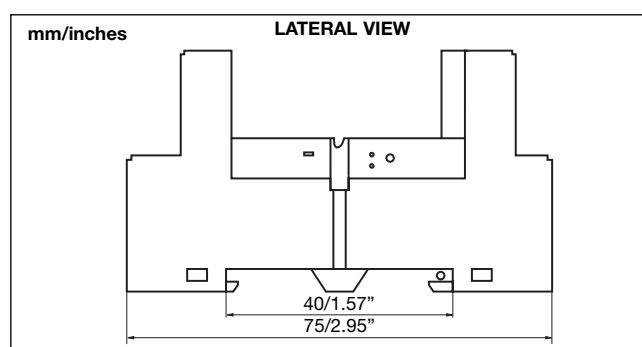
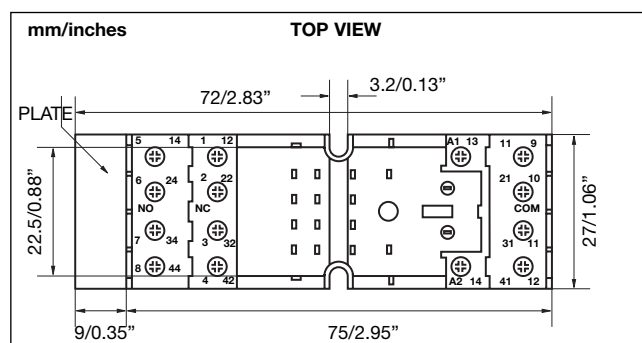


Bases and Sockets

DIN rail sockets codes are **ZMI4NA**, **ZMI4SA**, **ZMI4GA**, and **ZDM14A** details and specifications from page 41 to 44 of industrial relays catalogue.
PCB sockets codes are **ZC15/4A** and **ZC15/4** details and specifications on page 46 of industrial relays catalogue.

Sockets for RMI Relays

ZMI 2NA – ZMI 4NA



General data

Socket Material	PA66 +GF – V2
Socket colour	RAL 7035 / Pantone 1C
Contact Material	Cu Ni
Contact surface	5µm tin plated
Terminals	8µm zinc plated steel
Terminal type	Screw cage
Screws	5µm nickel plated 8.8 steel
Screw type	M3 with combi head (slotted, Philips Gr.1, Pozi)

Ratings	10A 300VAC
UL Rating	10A x 2 or 5A x 4 @ 300VAC
Operating temp.	-25° to +70°C (-13° to +158°F)
Insulation voltage	>4kV
Creepage and Clearance	Gr.C250, VDE 0110b / 2.79
Maximum Screw torque	1.0N/m
Max Wire section	
Flex / compact wire	2 x 2.5mm ² (14AWG)
Cable End	2 x 1.5mm ² (16AWG)
Terminal Protection degree	IP 20 (EN60529)

Approvals



Ordering code 2 contacts version for RMI A 2 10 xxx with Plastic hold down spring :
 Ordering code 4 contacts version for RMI A 4 5 xxx with Plastic hold down spring :
 Ordering code 2 contacts version for RMI A 2 10 xxx with Metal hold down spring :
 Ordering code 4 contacts version for RMI A 4 5 xxx with Metal hold down spring :

ZMI2NA / ZMI4NA
 ZMI4NA
 ZMI2NA-M / ZMI4NA-M
 ZMI4NA-M

Box content: 10 sockets, 10 labels, 10 Plastic hold down springs
 Box size: (W 155 x D 165 x H 70) mm Weight: 750g
 (W 6.10 x D 6.50 x H 2.75) inches Weight: 26.45oz

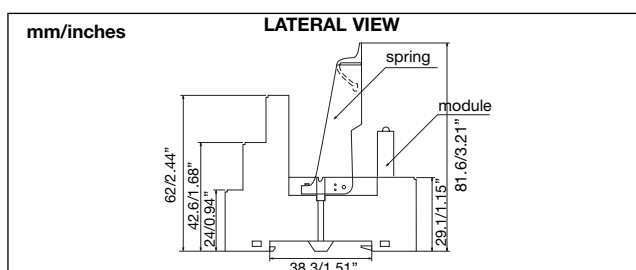
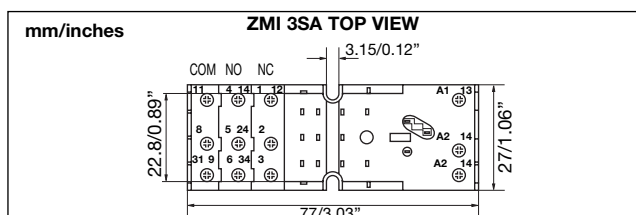
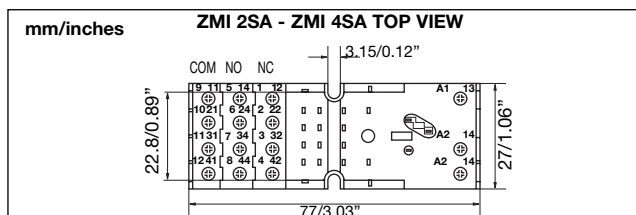
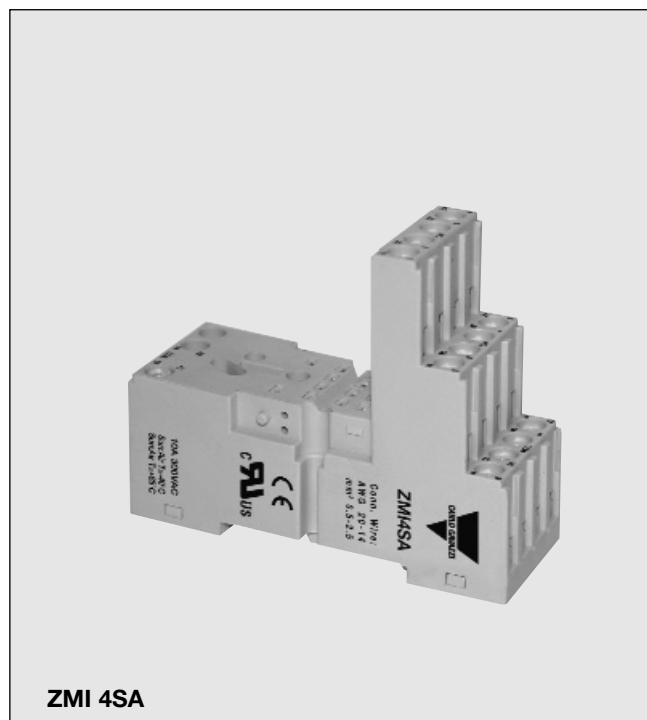
Optional Accessories (to be ordered separately if required)

Metal spare hold down Spring	SZMI36M (see on page 82)
Plastic spare hold down Spring	SZMI35 (see on page 82)
Plastic spare hold down Spring	6.73.00.61.4 (see on page 82)

Labels	6.73.00.61.300
Bridging bar	ZMI-BB (see on page 85)
Modules	(see on page 79)

Sockets for RMI Relays

ZMI 2SA - ZMI 3SA - ZMI 4SA



General data

Socket material	PA66 +GF - V2
Socket colour	RAL 7035 / Pantone 1C
Contact material	Cu Ni
Contact surface	5µm tin plated
Terminals	8µm zinc plated steel
Terminal type	Screw cage
Screws	5µm nickel plated 8.8 steel
Screw type	M3 with combi head (slotted, Philips Gr.1, Pozzi)
Ratings	10A x 2 or 5A x 4 @ 300VAC

UL rating	10A 300VAC
Insulation voltage	>4kV
Operating temp.	-25° to +85°C (-13° to +185°F)
Creepage and clearance	Gr.C250, VDE 0110b /2.79
Maximum screw torque	1N/m
Max wire section	0.5-2.5mm ² (20AWG - 14AWG)
Flex / compact wire	2 x 1.5mm ² (16AWG)
Cable End	
Terminal protection degree	IP 20 (EN60529)

Approvals



E73404

ZMI2SA / ZMI4SA
ZMI3SA
ZMI4SA

Ordering code 2 contacts version for RMI A 2 10 xxx :
Ordering code 3 contacts version for RMI A 3 7 xxx :
Ordering code 4 contacts version for RMI A 4 5 xxx :

Box content: 10 sockets, 10 labels, 10 Plastic hold down springs
Box size: (W 155 x D 165 x H 70) mm Weight: 750g
(W 6.10 x D 6.50 x H 2.75) inches Weight: 26.45oz

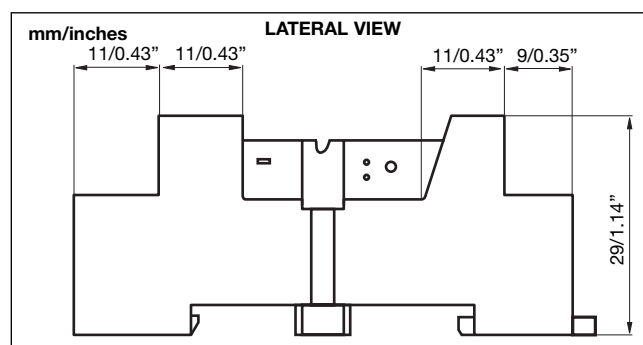
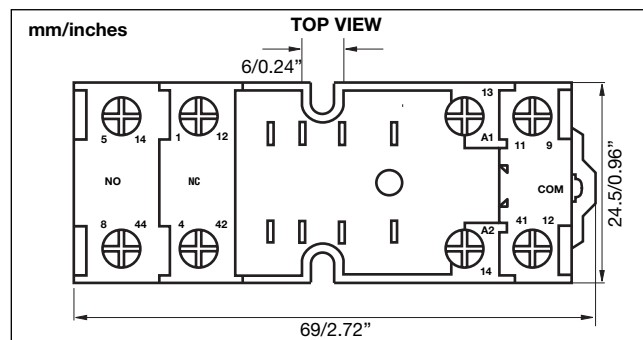
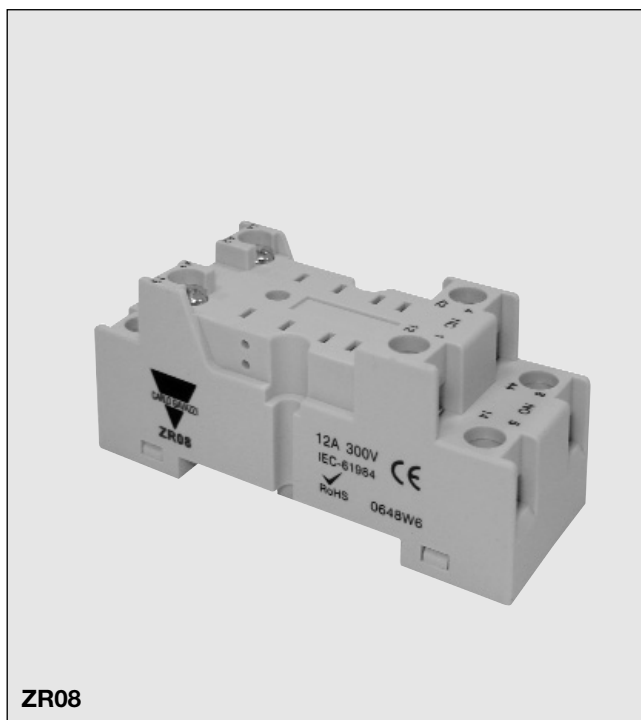
Optional Accessories (to be ordered separately if required)

Metal Hold Down Springs	SZMI36M (see on page 82)
Plastic spare hold down Spring	SZMI35 (see on page 82)
Plastic spare hold down Spring	6.73.00.61.4 (see on page 82)

Labels	6.73.00.61.300
Bridging bar	ZMI-BB (see on page 85)
Modules	(see on page 79)

Sockets for RMI Relays

ZR08



General data

Socket material	PA6 + GF - V2
Socket colour	RAL 7035 / Pantone 1C
Contact material	CuZn33
Contact surface	6µm nickel plated
Terminal type	Screw cage
Screws	5µm nickel plated 8.8 steel
Screw type	M3 with combi head (slotted, Philips Gr.1, Pozi)
Ratings @ 300VAC	12A

Operating temp.	-25° to +85°C (-13° to +185°F)
Insulation voltage	>3kV
Separation between contacts and contact coil	VDE0106/101
Maximum screw torque	0.8N/m
Max wire section	
Flex / compact wire	2 x 1.5mm ² (16AWG)
Cable End	2 x 1.5mm ² (16AWG)
Terminal protection degree	IP 20B (EN60529)

Approvals



Ordering code 2 contacts version for RMI A 2 10 with metal hold down spring:

ZR08

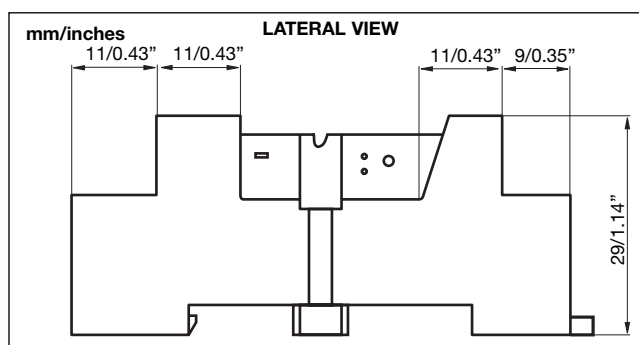
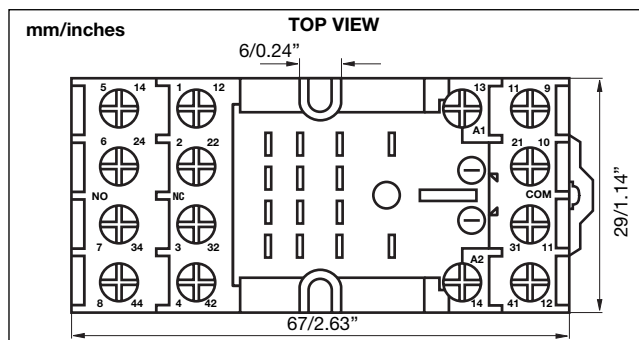
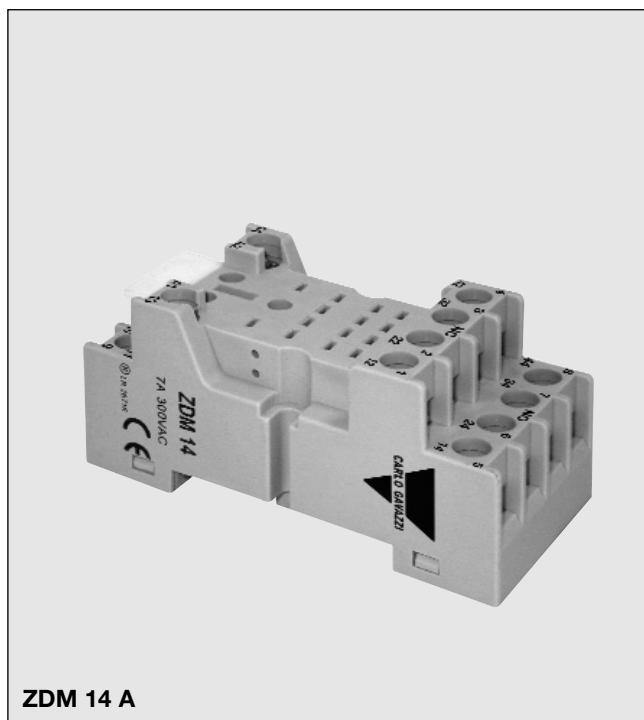
Box content: 10 sockets, 10 labels, 10 Hold down springs
 Box size: (W 73 x D 66 x H 150) mm Weight: 560g
 (W 2.87 x D 2.60 x H 5.91) inches Weight: 19.75oz

Optional Accessories (to be ordered separately if required)

Metal hold down Spring	SZMI36M (see on page 82)
Labels	6.73.00.61.300
Modules	(see on page 79)

Sockets for RMI Relays

ZDM 14 A



General data

Soclet material	PA66 + GF (V0)
Socket colour	RAL 7035 / Pantone 1C
Contact material	CuSn
Contact surface	6µm nickel plated
Terminal type	Screw cage
Screws	5µm nickel plated 8.8 steel
Screw type	M3 with combi head (slotted, Philips Gr.1, Pozi)
Ratings @ 300VAC	10A

Operating temp.	-25° to +85°C (-13° to +185°F)
Insulation voltage	>3kV
Separation between contacts and contact coil	VDE0106/101
Maximum screw torque	0.8N/m
Max Wire section	
Flex / compact wire	2 x 1.5mm ² (16AWG)
Cable End	2 x 1.5mm ² (16AWG)
Terminal Protection degree	IP 20B (EN60529)

Approvals



Ordering code 4 contacts version for RMI A 2 10 / 4 5 with metal hold down spring:

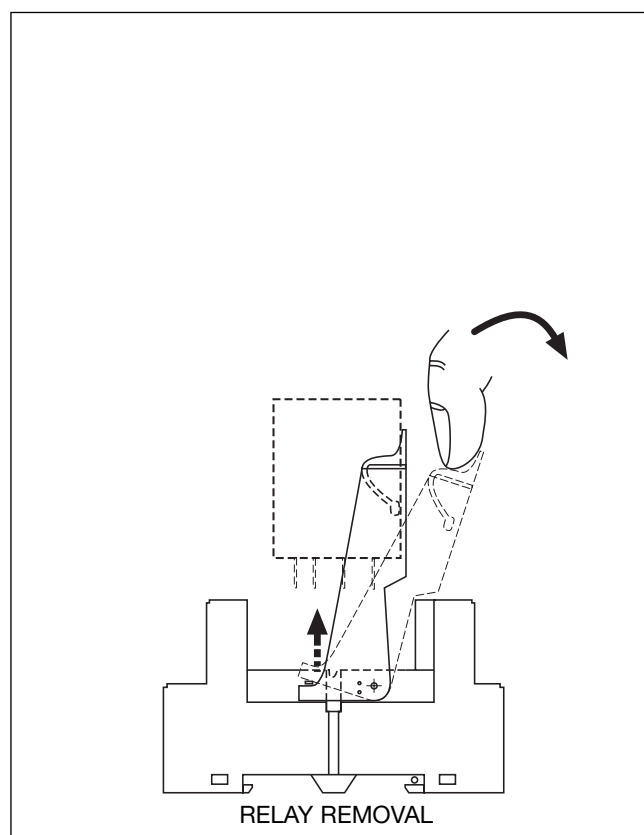
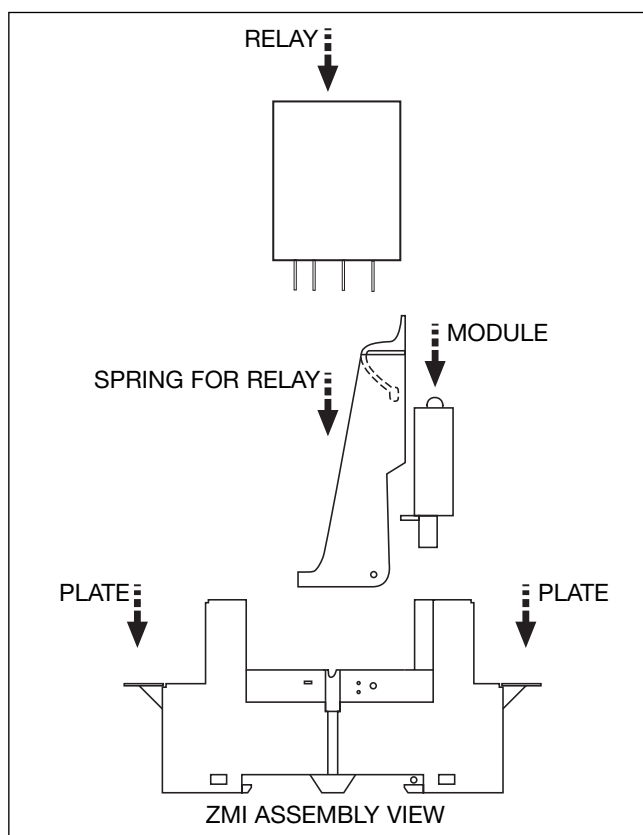
ZDM 14 A

Box content: 10 sockets, 10 labels, 10 Hold down springs
 Box size: (W 73 x D 66 x H 150) mm Weight: 560g
 (W 2.87 x D 2.60 x H 5.91) inches Weight: 19.75oz

Optional Accessories (to be ordered separately if required)

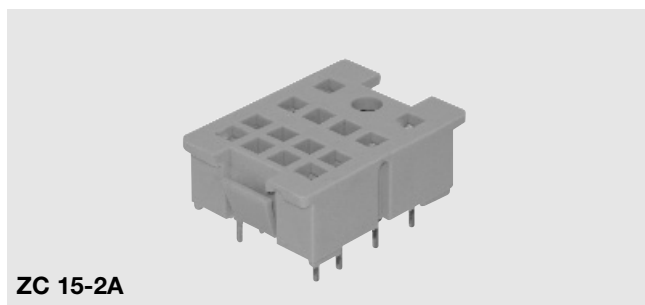
Metal hold down Spring	SZMI36M (see on page 82)
Labels	6.73.00.61.300
Modules	(see on page 79)

Installation Operations

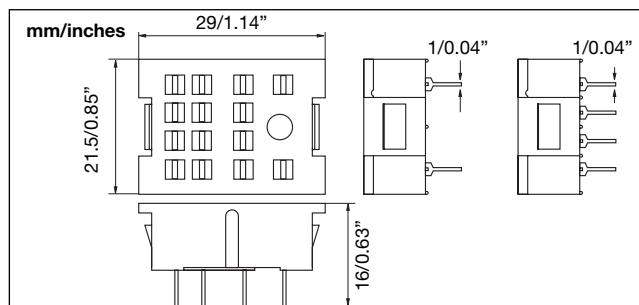


Sockets for RMI Relays

ZC 15/2A - ZC 15/4A

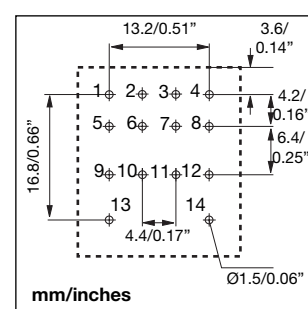
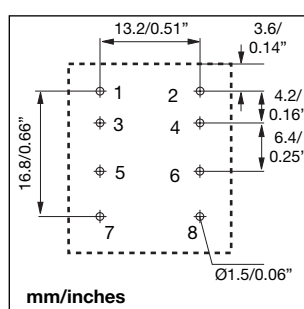


ZC 15-2A



General data

Rated voltage	300V
Rated current	ZC 15-2A 12A ZC 15-4A 10A
Insulation voltage	2kV
Operating temperature	-25° to +85°C (-13° to +185°F)
Socket material	ABS Grey
Socket colour	RAL 7035 / Pantone 1C
Contact material	Copper tin plated CuSn ₆



Ordering part number	ZC152A
Ordering part number	ZC154A
Box content:	10 sockets
Box size:	(W 125 x D 30 x H 25) mm Weight: 100g (W 4.92 x D 1.18 x H 0.98) inches Weight: 3.53oz

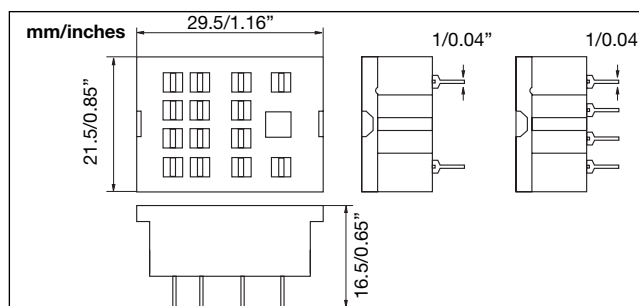
Approvals



ZC 15/2 - ZC 15/4

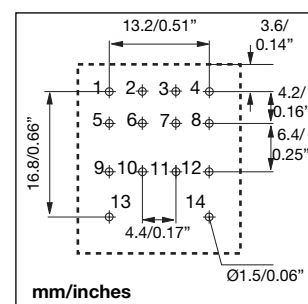
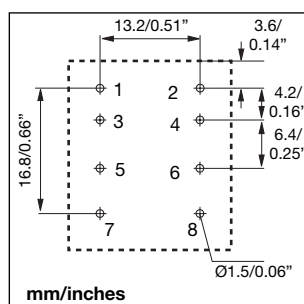


ZC 15/2



General data

Rated Voltage	250V
Rated Current	10A
Insulation Voltage	2kV
Operating temperature	-25° to +85°C (-13° to +185°F)
Socket Material	PPEm
Socket colour	Black
Contact material	Copper tin plated CuSn



Ordering part number	ZC15/2	9399028000
Ordering part number	ZC15/4	9399028200
Box content:	100 sockets	
Box size:	(W 150 x D 110 x H 70) mm Weight: 900g (W 5.90 x D 4.33 x H 2.75) inches Weight: 31.75oz	

Approvals



Industrial Relay Type RPY 1 16A Monostable

CARLO GAVAZZI



RPY 1

- High switching power
- Small size
- Wide range of applications
- 16A switching capacity
- 1 pole with 2 terminals
- Flanged (blade) pins 5mm (0.20")
- DC coils from 6 to 240V
- AC coils from 6 to 380V
- High sensitivity
- Compliant with CE low voltage directive
- TÜV, UL, CSA approved

Product Description

The RPY relay can be used for a wide range of industrial applications.

Available in 1, 2, 3, 4 pole change-over contact configuration. Its wide terminals allow reliability big currents.

Approvals



Ordering Key

RPY A 001 A24 DLT

Type _____
Terminal type _____
Contact code _____
Coil code _____
Options _____

Terminal type: A= Plug in terminals, blades
B= PCB terminals

Box content: 20 relays
Box size: (W 240 x D 105 x H 38) mm Weight: 750g
(W 9.45 x D 4.13 x H 1.50) inches Weight: 26.45oz

Type Selection

Contact configuration	Contact rating	Contact code
1 change over contact (DPDT- 1form C)	16A	001

Coil Characteristics, DC @ +25°C (+77°F), coil power 900mW

Coil Code	Nominal Voltage VDC	Pick-up Voltage VDC	Drop-out Voltage VDC	Max.Allowed Voltage VDC	Coil Current mA	Coil Resistance Ω
6	6	4.5	0.60	6.6	150	40
9	9	6.75	0.90	9.9	100	90
12	12	9	1.20	13.2	75	160
24	24	18	2.40	26.4	36.9	650
36	36	27	3.60	39.6	24	1500
48	48	36	4.80	52.8	18.5	2600
100	100	75	10	110	9.09	11000
110	110	82.5	11	121	10	11000
220	220	165	22	242	5.24	42000
240	240	180	24	264	3.75	64000

Coil Characteristics, AC @ +25°C (+77°F), coil power 1.2V A

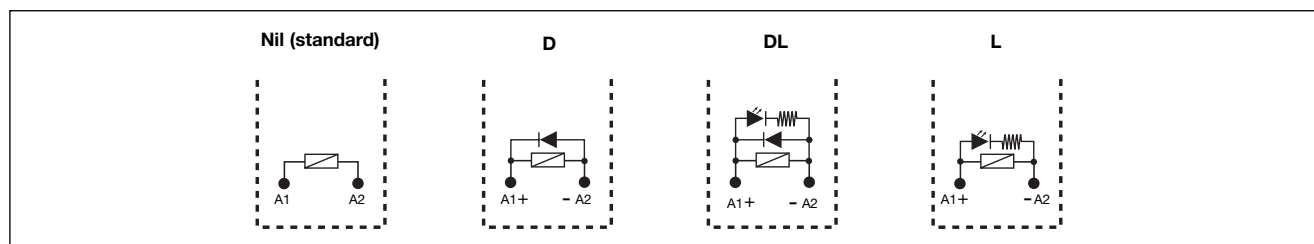
Coil Code	Nominal Voltage VAC	Pick-up Voltage VAC	Drop-out Voltage VAC	Max. Allowed Voltage VAC	Coil Current mA		Coil Resistance Ω
					50Hz	60Hz	
A6	6	6	1.8	6.6	230	200	11.5
A12	12	12	3.6	13.2	120	1000	40
A24	24	24	7.2	26.4	57.5	50	160
A36	36	36	10.8	39.6	38	33	370
A48	48	48	14.4	52.8	28.75	25	600
A110	100/110	110	33	121	12.7	11	3750
A120	120	120	36	142	11.5	10	3900
A220	220	220	66	242	6.3	5.5	13000
A240	240	240	72	264	5.75	5	18790
A380	380	380	114	418	3.62	3.15	42000

Options

Nil = Standard (fig. 1)
D = Free Wheeling Diode (DC coil only)
F = Flange Mount (fig. 2)
F1 = Lateral Flange (fig. 3)
G = Gold Plated Contacts

L = LED
T = Test Button

Note:
In case of more options use the alphabetical order for coding.
LED and test button are not available on flange mount version



Contact Characteristics

Contact Rating (With resistive load)	16A - 250VAC	Max Switching Power	4000VA / 450W
Rated values	16A-250VAC / 28VDC	Life	
Material	AgSnO ₂ In ₂ O ₃	Electrical life	1x10 ⁵ cycles (3600ops/h)
Contact Resistance	≤50m Ω	Mechanical	1x10 ⁷ cycles (18000ops/h)
Current		UL/CSA ratings	1/2Hp 120VAC 1Hp 240VAC 16A @ 30VDC 16A @ 250VAC
Max. switching current	16A		
Min. switching current	10mA @ 12VDC		
Min. switching current G version	1mA @ 6VDC		

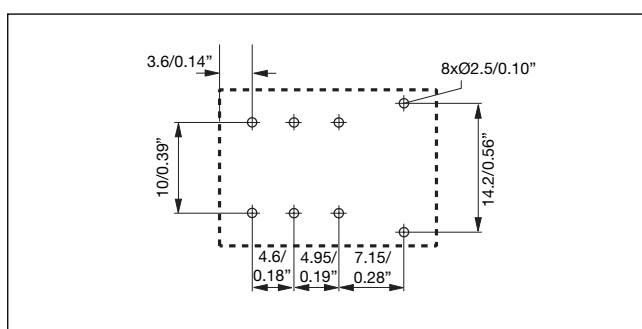
Insulation

Test voltage (1min.)		Insulation According to EN61810-5	
Between coil and contacts	2000VAC	Rated insulation voltage	250V
Between open contacts	1200VAC	Impulsive insulation	2kV
Contact / contact	1200VAC	Overvoltage category	II
Insulation resistance	≥1000M Ω - 500V		

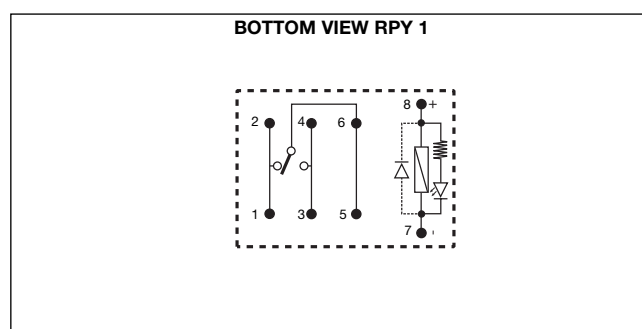
General Data

Nominal coil power	0.9W DC – 1.2VA AC	Vibration resistance	10 to 55Hz 1mm (0.04")
Operating time (at nominal voltage)	≤20ms	Shock resistance Functional	98m/s² (10G)
Release time (at nominal voltage)	≤20ms	Termination	Flanges (blades) 5mm (0.20")
Ambient temperature	-25° to + 55°C (-13° to +131°F)	Construction	Dust cover IP 40
Ambient humidity	35% to 85%	Weight	35g (1.23oz)

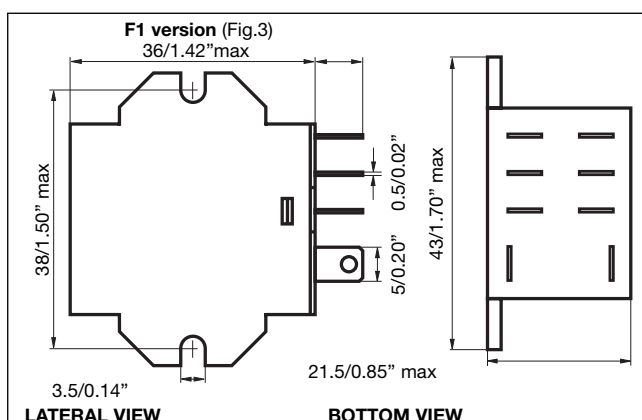
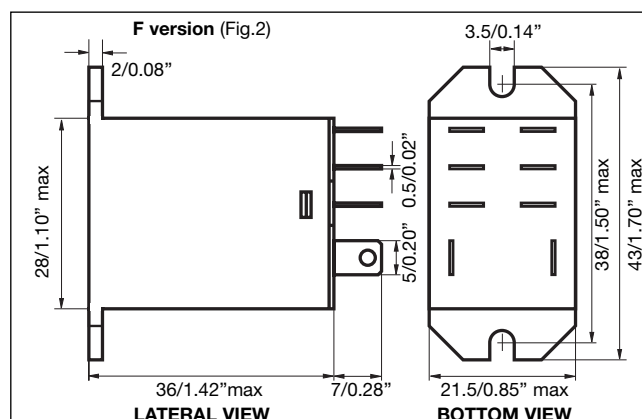
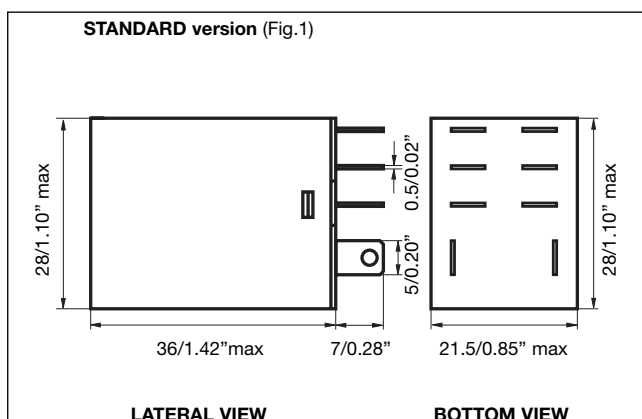
Pin View mm/inches



Wiring Diagram

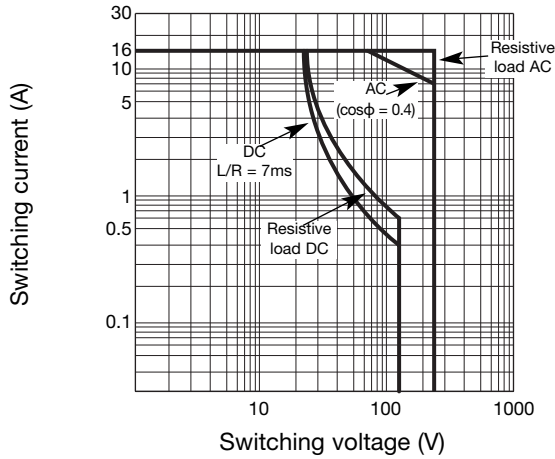


Dimensions mm/inches

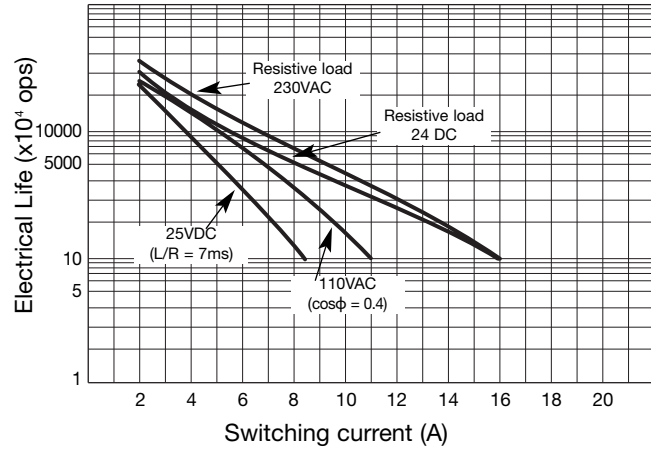


Diagrams

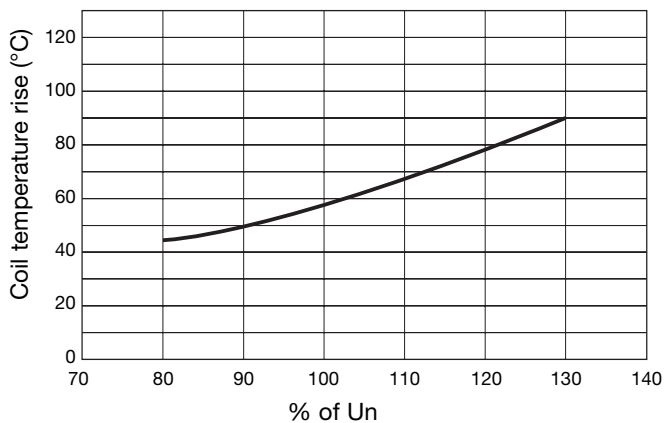
Max. switching current



Electrical Life



Temperature curve of coil



Bases and Sockets

DIN rail sockets code are **ZPY8A** and **ZPY08C** details and specifications on pages 63 and 66 of industrial relays catalogue.
PCB sockets code is **ZY08** details and specifications on page 67 of industrial relays catalogue.

Industrial Relay Type RPY 2 10A Monostable



- High switching power
- Small size
- Wide range of applications
- 10A switching capacity
- 2 pole configuration
- Flanged (blade) pins 5mm (0.20")
- DC coils from 6 to 240V
- AC coils from 6 to 380V
- High sensitivity
- Compliant with CE low voltage directive
- TÜV, UL, CSA approved

Product Description

The RPY relay can be used for a wide range of industrial applications.

Available in a 1, 2, 3, 4 pole change-over contact configuration. Its wide terminals allow reliability at big currents.

Approvals



Ordering Key

RPY A 002 A24 DLT

Type _____
Terminal type _____
Contact code _____
Coil Code _____
Options _____

Terminal type A = Plug in terminals, blades
B = PCB terminals

Box content: 20 relays
Box size: (W 240 x D 105 x H 38) mm Weight: 750g
(W 9.45 x D 4.13 x H 1.50) inches Weight: 26.45oz

Type Selection

Contact configuration	Contact rating	Contact code
2 change over contact (DPDT- 2 form C)	10A	002

Coil Characteristics, DC @ +25°C (+77°F), coil power 900mW

Coil Code	Nominal Voltage VDC	Pick-up Voltage VDC	Drop-out Voltage VDC	Max.Allowed Voltage VDC	Coil Current mA	Coil Resistance Ω
6	6	4.5	0.60	6.6	150	40
9	9	6.75	0.90	9.9	100	90
12	12	9	1.20	13.2	75	160
24	24	18	2.40	26.4	36.9	650
36	36	27	3.60	39.6	24	1500
48	48	36	4.80	52.8	18.5	2600
100	100	75	10.0	110	9.09	11000
110	110	82.5	11.0	121	10	11000
220	220	165	22.0	242	5.24	42000
240	240	180	24.0	264	3.75	64000

Coil Characteristics, AC @ +25°C (+77°F), coil power 1.2VA

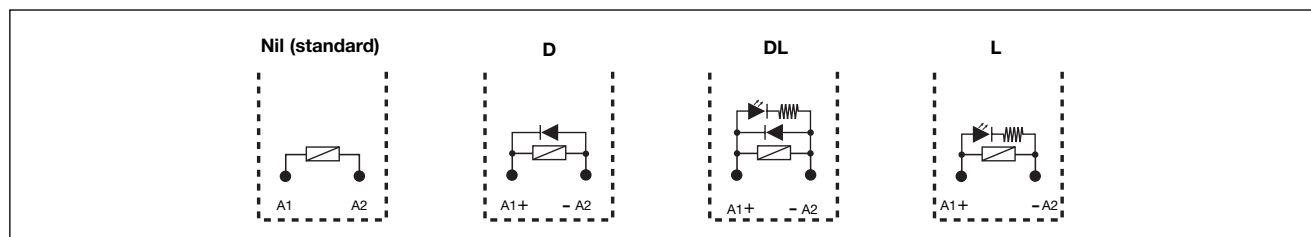
Coil Code	Nominal Voltage VAC	Pick-up Voltage VAC	Drop-out Voltage VAC	Max. Allowed Voltage VAC	Coil Current mA		Coil Resistance Ω
					50Hz	60Hz	
A6	6	4.8	1.8	6.6	230	200	11.5
A12	12	9.6	3.6	13.2	120	100	40
A24	24	19.2	7.2	26.4	57.5	50	160
A36	36	28.8	10.8	39.6	38	33	370
A48	48	38.4	14.4	52.8	28.75	25	600
A110	100/110	88	33.0	121	12.7	11	3750
A120	120	96	36.0	142	11.5	10	3900
A220	220	176	66.0	242	6.3	5.5	13000
A240	240	192	72.0	264	5.75	5	18790
A380	380	304	114	418	3.62	3.15	42000

Options

Nil = Standard (Fig.1)
D = Free Wheeling diode (DC coil only)
F = Flange Mount (Fig.2)
F1 = lateral flange (Fig.3)
G = Gold Plated contacts

L = LED
T = Test Button

Note:
In case of more options use the alphabetical order for coding.
LED and test button are not available on flange mount version



Contact Characteristics

Contact Rating (With resistive load)	10A-250VAC	Max Switching Power	2500VA / 280W
Rated values	10A-250VAC / 28VDC	Life	
Material	AgSnO₂In₂O₃	Electrical life	1x10⁵ cycles (3600ops/h)
Contact Resistance	≤50mΩ	Mechanical	1x10⁷ cycles (18000ops/h)
Current		UL/CSA ratings	
Max. switching current	10A		1/3Hp 120VAC
Min. switching current	10mA @ 12VDC		1/2Hp 240VAC
Min. switching current G version	1mA @ 6VDC		10A @ 30VDC
			10A @ 250VAC

Insulation

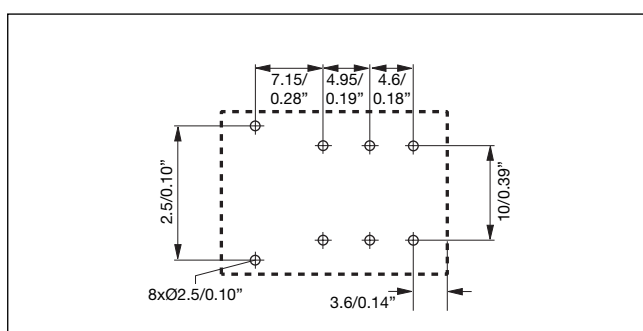
Test voltage(1min.)		Insulation According to	
Between coil and contacts	2000VAC	EN61810-5	
Between open contacts	1200VAC	Rated insulation voltage	250V
Contact / contact	1200VAC	Impulsive insulation	2kV
Insulation resistance	≥1000MΩ - 500V	Overvoltage categor	II

General Data

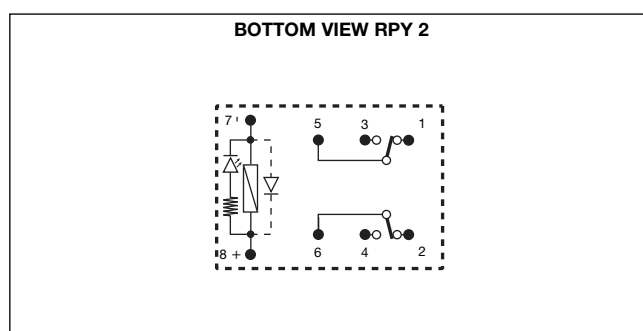
Nominal coil power	0.9W DC – 1.2VA AC
Operating time (at nominal voltage)	≤20ms
Release time (at nominal voltage)	≤20ms
Ambient temperature	-25°C +55°C (-13°F to +131°F)
Ambient humidity	35% to 85%

Vibration resistance	10 to 55Hz 1mm (0.04")
Shock resistance	
Functional	98m/s² (10G)
Termination	Flanges (blades) 5mm (0.20")
Construction	Dust cover
Weight	35g (1.23oz)

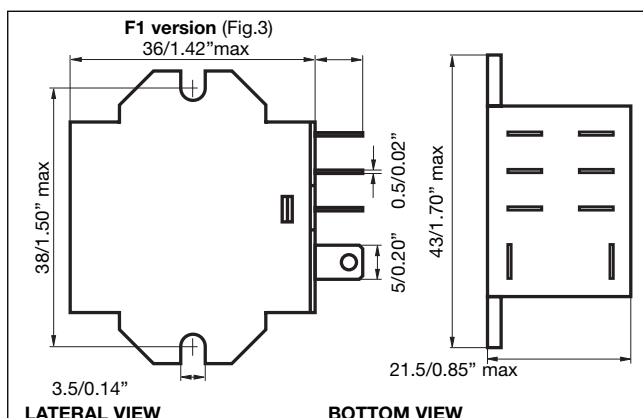
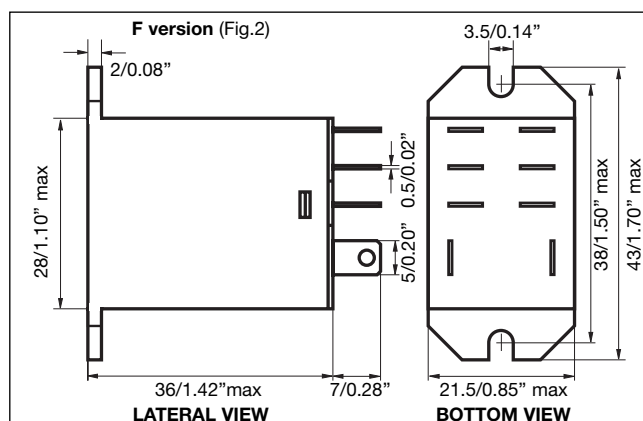
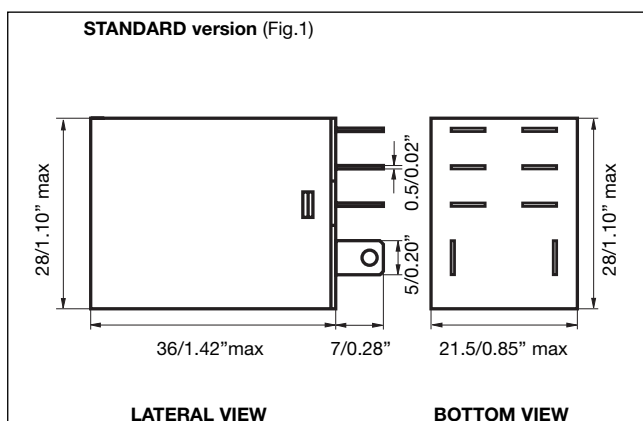
Pin View mm/inches



Wiring Diagram

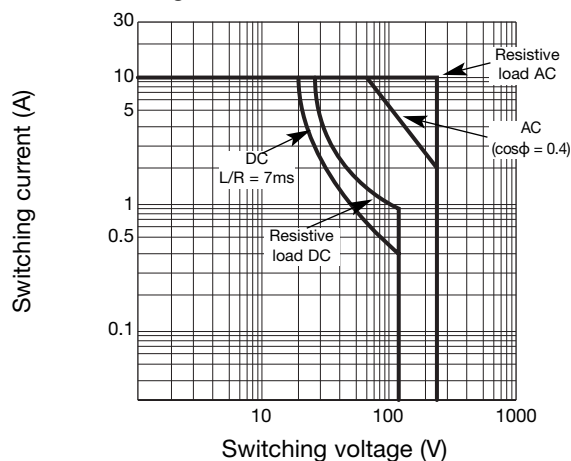


Dimensions mm/inches

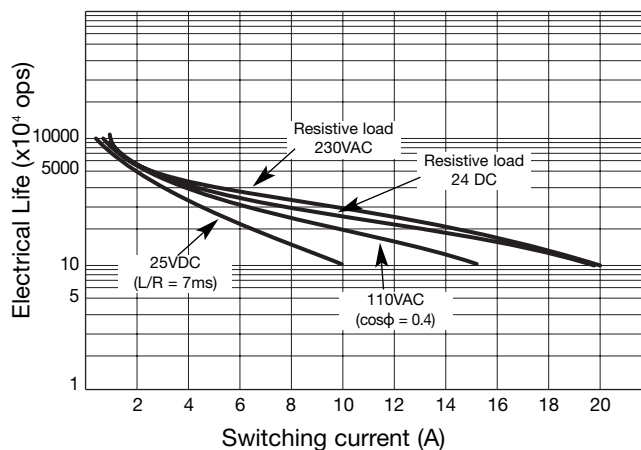


Diagrams

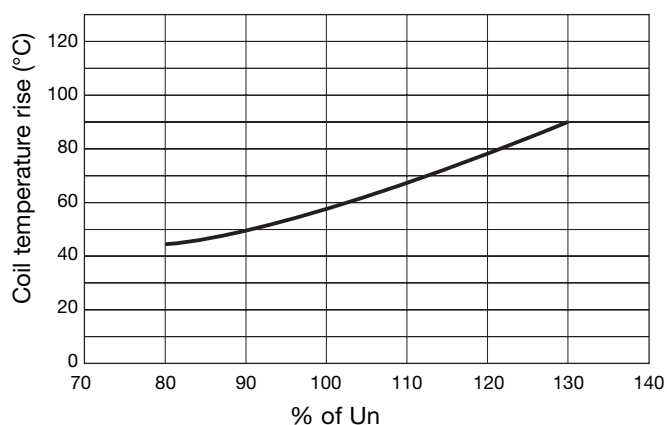
Max. switching current



Electrical Life



Temperature curve of coil



Bases and Sockets

DIN rail sockets code are **ZPY8A** and **ZPY08C** details and specifications on pages 63 and 66 of industrial relays catalogue.
PCB sockets code is **ZY08** details and specifications on page 67 of industrial relays catalogue.

Industrial Relay Type RPY 3 10A Monostable



- High switching power
- Wide range of applications
- 10A switching capacity
- 3 pole configuration
- Flanged pins 5mm (0.20")
- DC coils from 6 to 220V
- AC coils from 6 to 380V
- Compliant with CE low voltage directive
- TÜV, UL, CSA approved

Product Description

The RPY relay can be used for a wide range of industrial applications. Available in a 1, 2, 3, 4 pole change-over contact configuration. Its wide terminals allow reliability and big currents.

Approvals



Ordering Key

RPY A 003 A24 DLT

Type _____
Terminal type _____
Contact code _____
Coil code _____
Options _____

Terminal type: A= Plug in terminals, blades
B= PCB terminals

Box content: 10 relays
Box size: (W 240 x D 105 x H 38) mm Weight: 750g
(W 9.45 x D 4.13 x H 1.50) inches Weight: 26.45oz

Type Selection

Contact configuration	Contact rating	Contact code
3 change over contact (DPDT- 3 form C)	10A	003

Coil Characteristics, DC @ +25°C (+77°F), coil power 1.4W

Coil Code	Nominal Voltage VDC	Pick-up Voltage VDC	Drop-out Voltage VDC	Max.Allowed Voltage VDC	Coil Current mA	Coil Resistance Ω
6	6	4.5	0.60	6.6	240	25
9	9	6.75	0.90	9.9	161	56
12	12	9	1.20	13.2	120	100
24	24	18	2.40	26.4	60	400
36	36	27	3.60	39.6	40	900
48	48	36	4.80	52.8	30	1600
110	110	82.5	11.0	121	13	8400
220	220	165	22.0	242	6.67	33000

Coil Characteristics, AC @ +25°C (77°F), coil power 2VA

Coil Code	Nominal Voltage VAC	Pick-up Voltage VAC	Drop-out Voltage VAC	Max.Allowed Voltage VAC	Coil Current mA		Coil Resistance Ω
					50Hz	60Hz	
A6	6	4.8	1.8	6.6	330	280	6.5
A12	12	9.6	3.6	13.2	167	142	25.5
A24	24	19.2	7.2	26.4	83	70	102
A36	36	28.8	10.8	39.6	55	47	230
A48	48	38.4	14.4	52.8	42	36	410
A110	100/110	88	33.0	121	18	15	2300
A120	120	96	36.0	142	17	14.5	2700
A220	220	176	66.0	242	9	7.7	8600
A240	240	192	72.0	264	8.3	7	10000
A380	380	304	114	418	5.2	4.4	27500

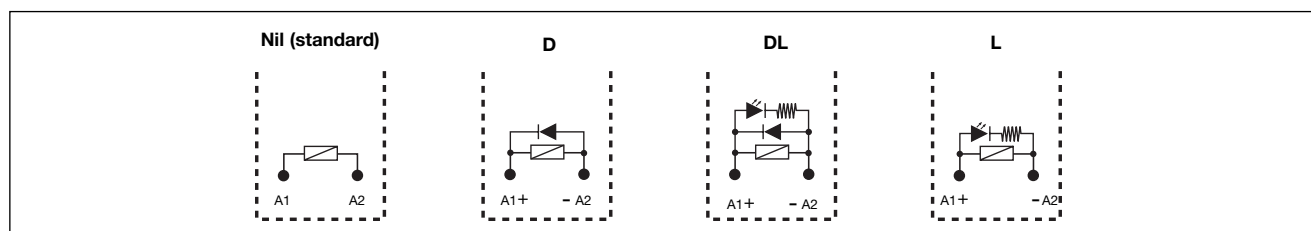
Options

Nil = Standard (Fig.1)
D = Free Wheeling diode (DC coil only)
F = Flange Mount (Fig.2)
G = Gold Plated contacts

L = LED
T = Test Button

Note:

In case of more options use the alphabetical order for coding.
LED and test button are not available on flange mount version



Contact Characteristics

Contact Rating (With resistive load)	10A - 250VAC	Max Switching Power	2500VA / 280W
Usually rating	10A-250VAC / 28VDC	Life	
Material	AgSnO₂In₂O₃	Electrical life	1x10⁶ cycles (3600ops/h)
Contact Resistance	≤50mΩ	Mechanical	1x10⁷ cycles (18000 ops/h)
Current		UL/CSA ratings	
Max. switching current	10A		1/3Hp 120VAC
Min. switching current	10mA @ 12VDC		1/2Hp 240VAC
Min. switching current G version	1mA @ 6VDC		10A @ 30VDC
			10A @ 250VAC

Insulation

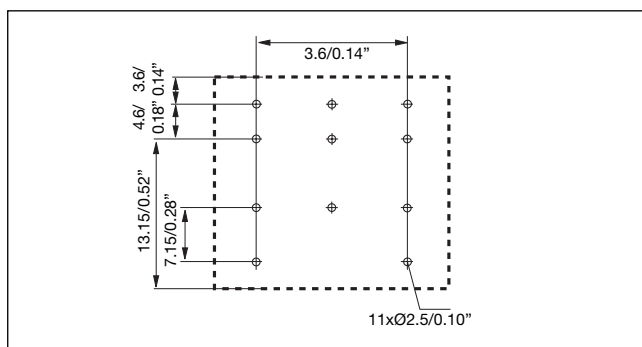
Test voltage (1min.)		Insulation According to EN61810-5	
Between coil and contacts	2000VAC	Rated insulation voltage	250V
Between open contacts	1200VAC	Impulsive insulation	2kV
Contact / contact	1200VAC	Overvoltage categor	II
Insulation resistance	≥1000MΩ - 500V		

General Data

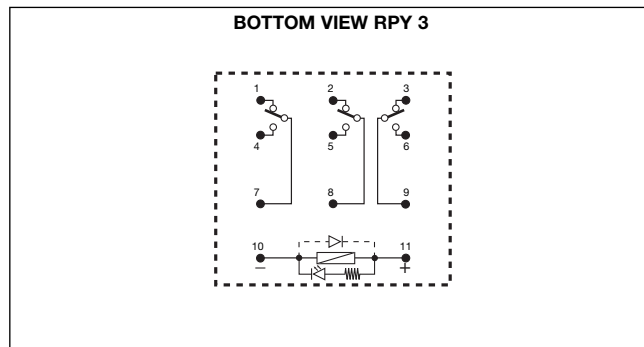
Nominal coil power	1.4W DC – 1.2VA AC
Operating time (at nominal voltage)	≤20ms
Release time (at nominal voltage)	≤20ms
Ambient temperature	-25° to +55°C (-13° to +131°F)
Ambient humidity	35% to 85%

Vibration resistance	10 to 55Hz 1mm (0.04")
Shock resistance	
Functional	98m/s² (10G)
Termination	Flanges (blades) 5mm (0.20")
Construction	Dust cover
Weight	50g (1.76oz)

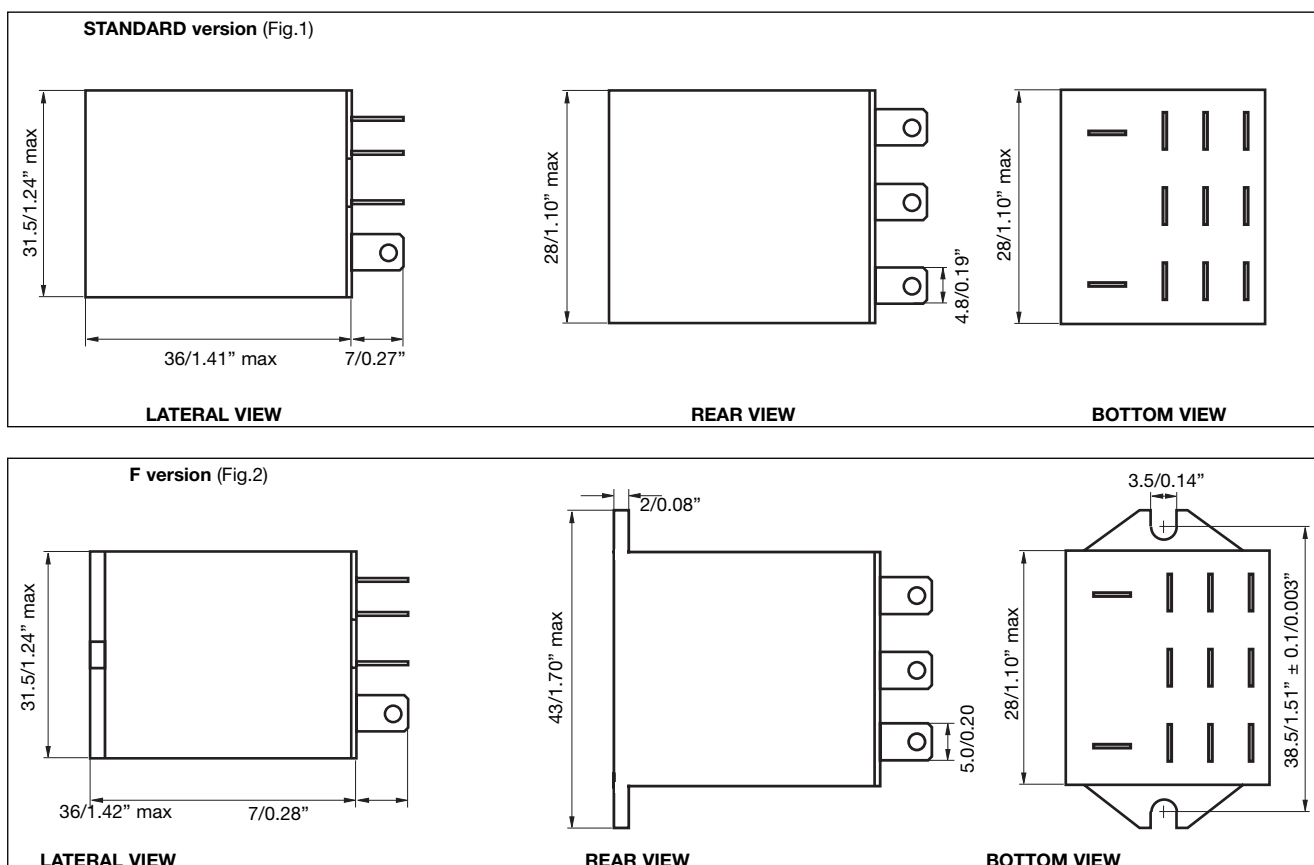
Pin View mm/inches



Wiring Diagram

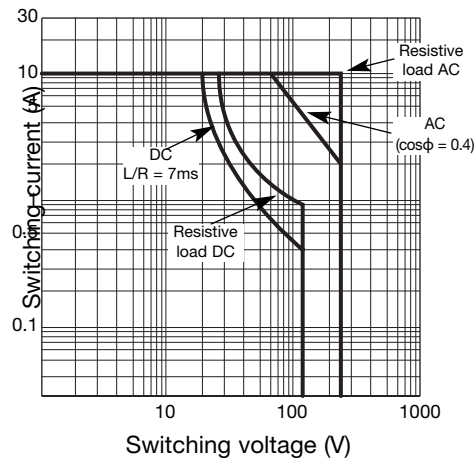


Dimensions mm/inches

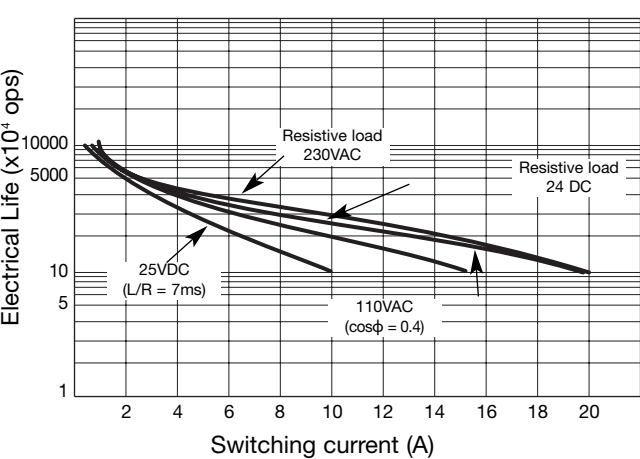


Diagrams

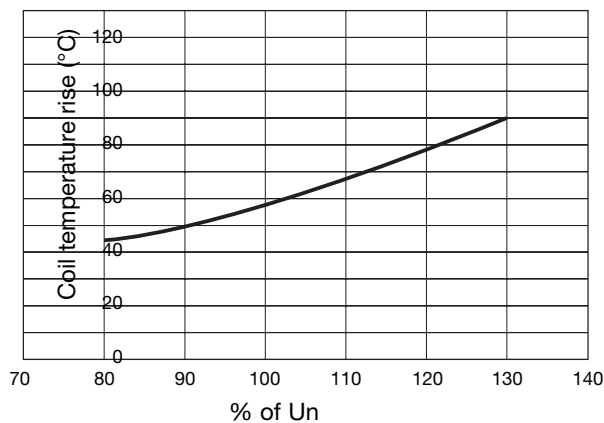
Max. switching current



Electrical Life



Temperature curve of coil



Bases and Sockets

DIN rail sockets code is **ZPY11A** details and specifications on page 64 of industrial relays catalogue.

Industrial Relay Type RPY 4 10A Monostable



- High switching power
- Wide range of applications
- 10A switching capacity
- 4 pole configuration
- Flanged pins 5mm (0.20")
- DC coils from 6 to 220V
- AC coils from 6 to 380V
- Compliant with CE low voltage directive
- TÜV, UL, CSA approved

Product Description

The RPY relay can be used for a wide range of industrial applications. Available in 1, 2, 3, 4 pole change-over contact configuration. Its wide terminals allow reliability big currents.

Approvals



Ordering Key

RPY A 004 A24 DLT

Type _____
Terminal type _____
Contact code _____
Coil code _____
Options _____

Terminal type: A = Plug in terminals, blades
B = PCB terminals

Box content: 10 relays
Box size: (W 240 x D 105 x H 38) mm Weight: 850g
(W 9.45 x D 4.13 x H 1.50) inches Weight: 29.99oz

Contact configuration

4 change over contacts (DPDT- 4 form C)

Contact rating

10A

Contact code

004

Coil Characteristics, DC @ +25°C (+77°F), coil power 1.5W

Coil Code	Nominal Voltage VDC	Pick-up Voltage VDC	Drop-out Voltage VDC	Max. Allowed Voltage VDC	Coil Current mA	Coil Resistance Ω
6	6	4.5	0.6	6.6	250	24
9	9	6.75	0.9	9.9	170	54
12	12	9	1.2	13.2	125	96
24	24	18	2.4	26.4	70	360
36	36	27	3.6	39.6	42	865
48	48	36	4.8	52.8	31	1540
110	110	82.5	11	121	16	6800
120	115/120	86	11.5	132	7.8	11000*
220	220	165	22	242	7.6	29000

*coil power 0.9 W

Coil Characteristics, AC @ +25°C (+77°F), coil power 2.5VA

Coil Code	Nominal Voltage VAC	Pick-up Voltage VAC	Drop-out Voltage VAC	Max. Allowed Voltage VAC	Coil Current mA		Coil Resistance Ω
					50Hz	60Hz	
A6	6	4.8	1.8	6.6	420	360	5
A12	12	9.6	3.6	13.2	210	180	20
A24	24	19.2	7.2	26.4	100	85	80
A36	36	28.8	10.8	39.6	70	60	180
A48	48	38.4	14.4	52.8	52	44	320
A110	100/110	88.0	30.0	121.0	25/23	21/19.5	1680
A120	120	96.0	36.0	142.0	20	17	2000
A220	220	176	66.0	242.0	12	10	6700
A240	240	192	72.0	264.0	10	8.5	8000
A380	380	304	114.0	418.0	6.5	5.5	29000

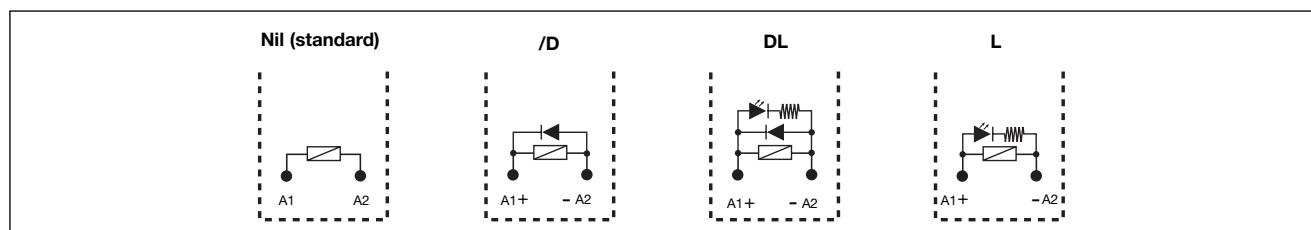
Options

Nil = Standard (Fig.1)
D = Free Wheeling diode (DC coil only)
F = Flange Mount (Fig.2)
G = Gold Plated contacts

L = LED
T = Test Button

Note:

In case of more options use the alphabetical order for coding.
LED and test button are not available on flange mount version



Contact Characteristics

Contact Rating (With resistive load)	10A – 250VAC	Max Switching Power	2500VA / 280W
Usually rating	10A-250VAC / 28VDC	Life	
Material	AgSnO₂In₂O₃	Electrical life	1x10⁵ cycles (3600ops/h)
Contact Resistance	≤50mΩ	Mechanical	1x10⁷ cycles (18000ops/h)
Current		UL/CSA ratings	
Max. switching current	10A		1/3Hp 120VAC
Min. switching current	10mA @ 12VDC		1/2Hp 240VAC
Min. switching current G version	1mA @ 6VDC		10A @ 30VDC
			10A @ 250VAC

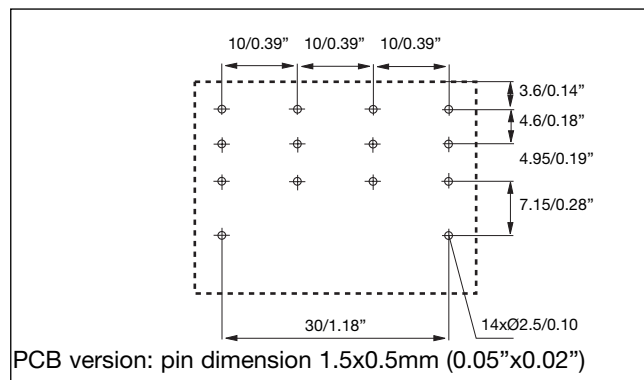
Insulation

Test voltage (1min.)		Insulation According to	
Between coil and contacts	2000VAC	EN61810-5	
Between open contacts	1200VAC	Rated insulation voltage	250V
Contact / contact	1200VAC	Impulsive insulation	2kV
Insulation resistance	≥1000MΩ - 500V	Overvoltage categor	II

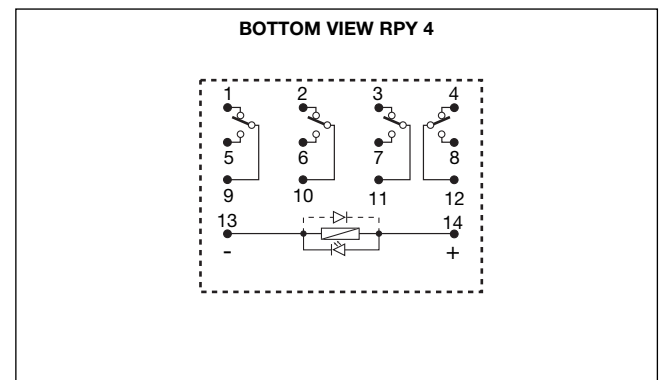
General Data

Nominal coil power	1.5W DC – 2.5VA AC	Vibration resistance	10 to 55Hz 1mm (0.04")
Operating time (at nominal voltage)	≤20ms	Shock resistance	
Release time (at nominal voltage)	≤20ms	Functional	98m/s ² (10G)
Ambient temperature	-25° to +55°C (-13° to +131°F)	Termination	Flanges (blades) 5mm (0.20")
Ambient humidity	35% to 85%	Construction	Dust cover
		Weight	65g (2.29oz)

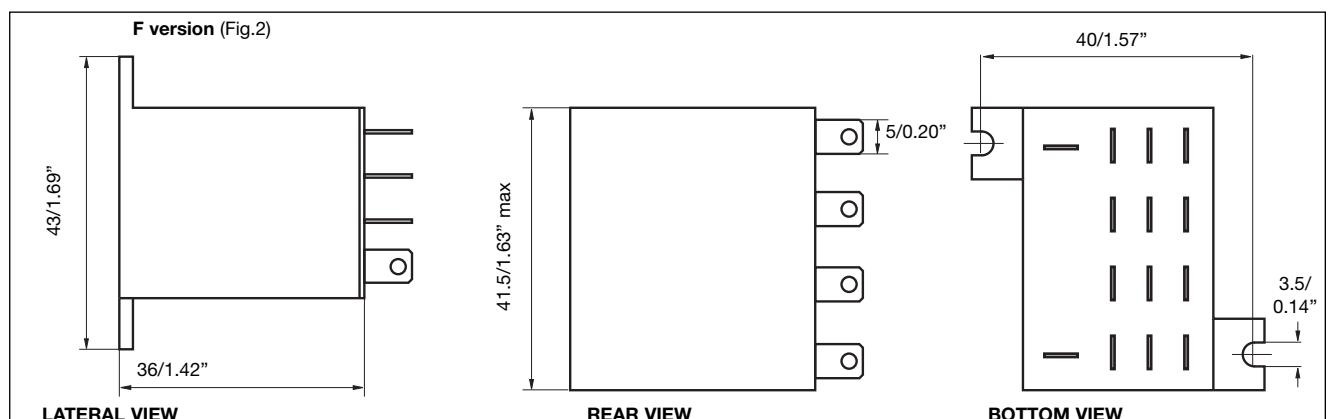
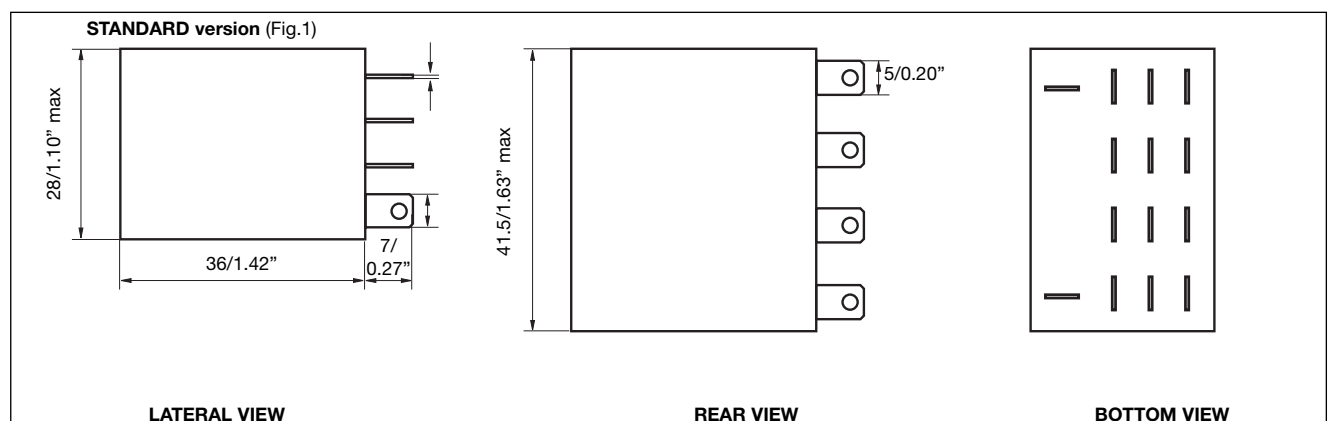
Pin View mm/inches



Wiring Diagram

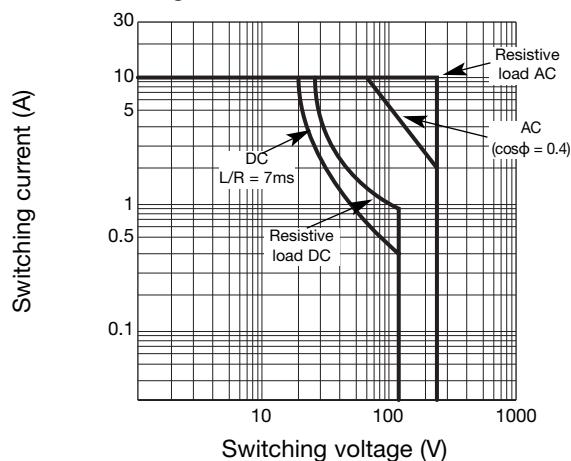


Dimensions mm/inches

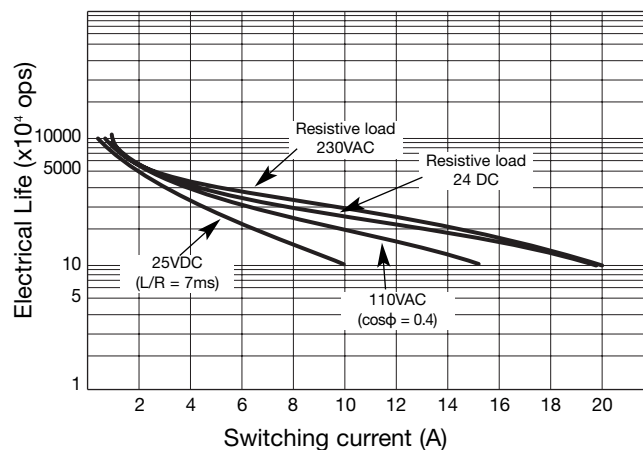


Diagrams

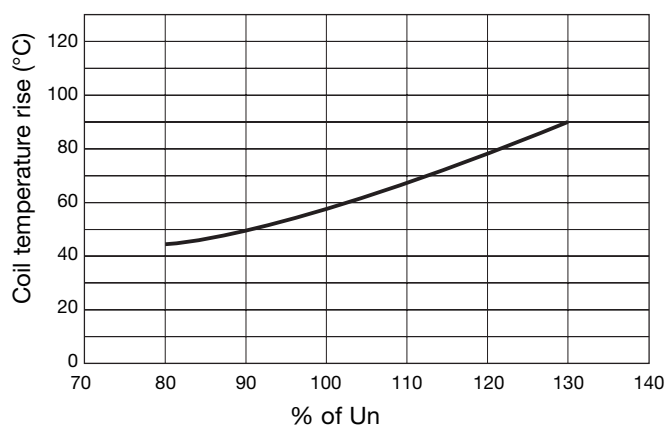
Max. switching current



Electrical Life



Temperature curve of coil

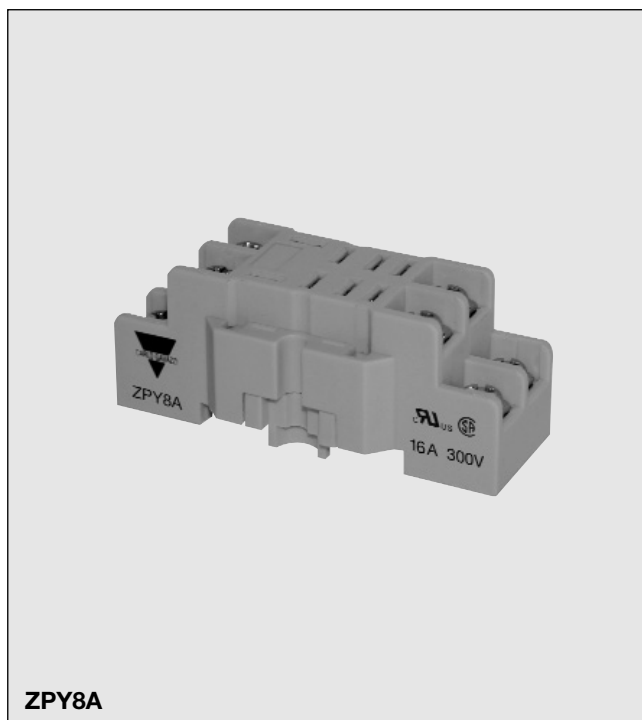


Bases and Sockets

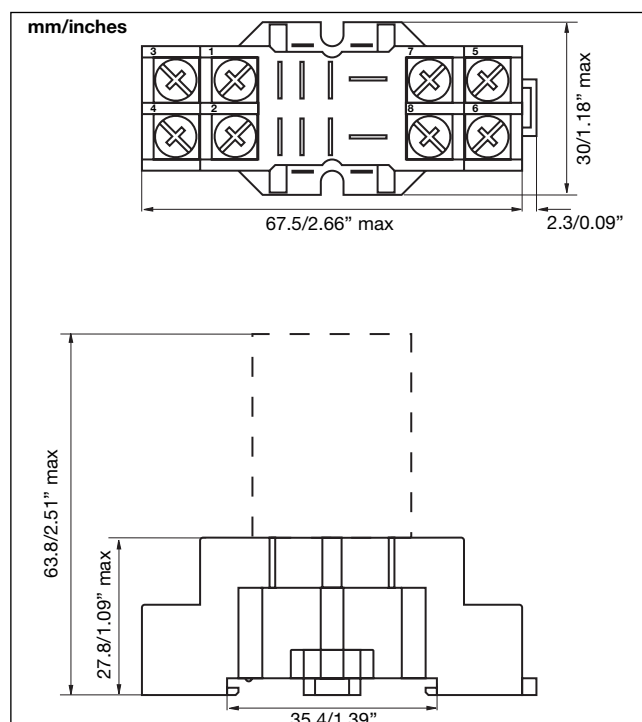
DIN rail sockets code is **ZPY14A** details and specifications on page 65 of industrial relays catalogue.
PCB sockets code is **ZY14** details and specifications on page 67 of industrial relays catalogue.

Sockets for RPY Relays

ZPY8A



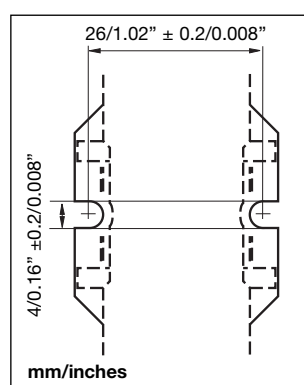
ZPY8A



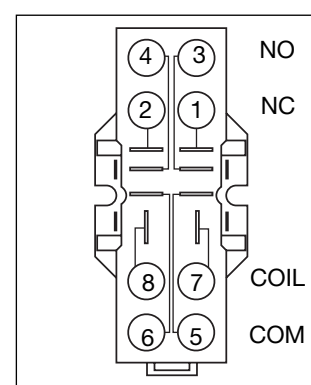
General data

Rated voltage	300VAC
Rated current	16A
Insulation voltage	>2kV
Socket material	PA66 + GF (V0)
Socket colour	RAL 7035 / Pantone 1C
Contact material	Nickel Plated - Cu Zn 33
Terminal type	Screw cage
Screw type	M3 with combi head (slotted, Philips Gr.1, Pozi)
Max. screw torque	1.0N/m
Max wire section	0.5-2.5mm ² (20AWG 14AWG)
Operating temperature	-25° to +85°C (-13° to +185°F)
UL rating	10A 300VAC
UL temperature	0° to +60°C (+32° to +140°F)

Drilling pattern



Wiring diagram



Approvals



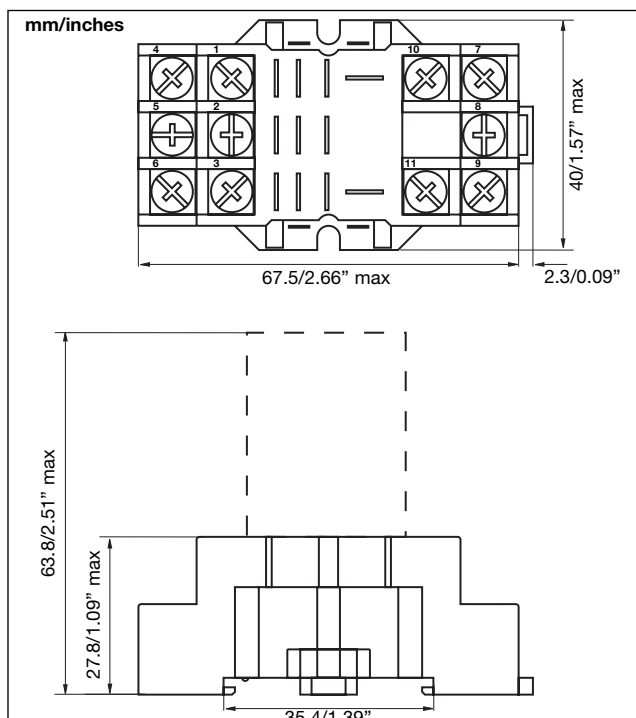
Box content: 10 sockets
 Box size: (W 71 x D 57 x H 150) mm Weight: 480g
 (W 2.80 x D 2.25 x H 5.90) inches Weight: 16.93oz

Optional Accessories (to be ordered separately if required)

Hold-down spring steel SZPY 35M (see on page 83)

Sockets for RPY Relays

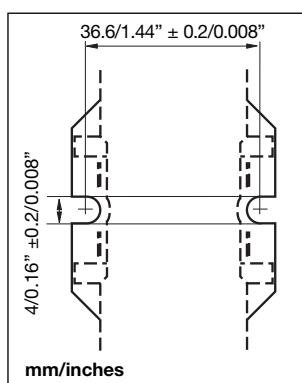
ZPY11A



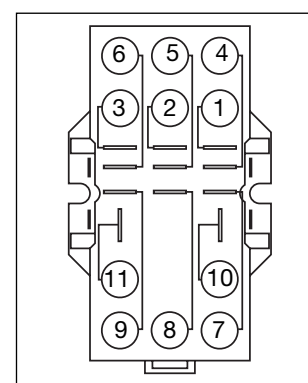
General data

Rated Voltage	400VAC
Rated Current	10A
Insulation Voltage	>2kV
Socket material	PA66 + GF (V0)
Socket colour	RAL 7035 / Pantone 1C
Contact material	Nickel Plated - Cu Zn 33
Screw type	Screw cage
Screw type	M3 with combi head (slotted, Philips Gr.1, Pozi)
Max. screw torque	1.0N/m
Max wire section	0.5-2.5mm ² (20AWG 14AWG)
Operating temperature	-25° to +85°C (-13° to +185°F)
UL rating	10A 300VAC
UL temperature	0° to +60°C (+32° to +140°F)

Drilling pattern



Wiring diagram



Approvals



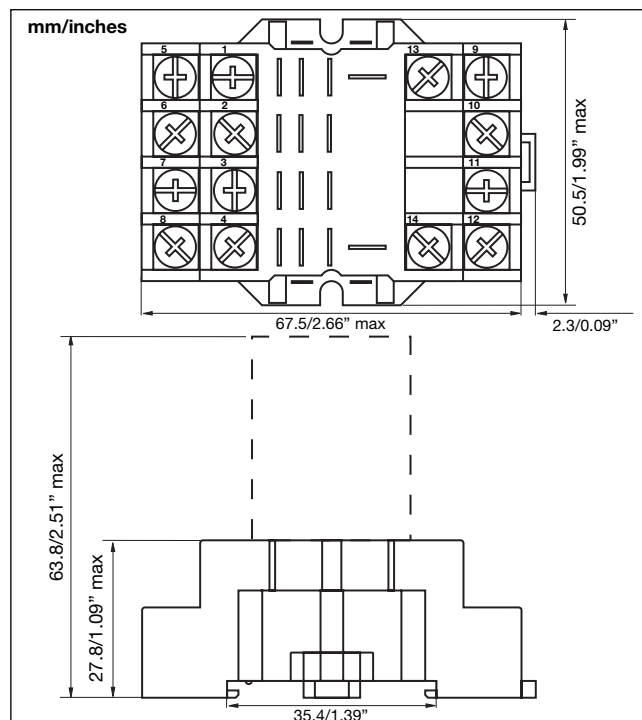
Box content: 10 sockets
 Box size: (W 81 x D 140 x H 72) mm Weight: 660g
 (W 3.19 x D 5.51 x H 2.83) inches Weight: 23.28oz

Optional Accessories (to be ordered separately if required)

Hold-down spring steel SZPY 35M (see on page 83)

Sockets for RPY Relays

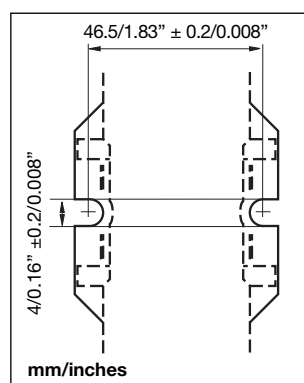
ZPY14A



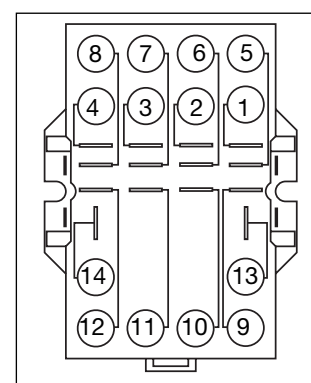
General data

Rated Voltage	400VAC
Rated Current	10A
Insulation Voltage	>2kV
Socket material	PA66 + GF (V0)
Socket colour	RAL 7035 / Pantone 1C
Contact material	Nickel Plated - Cu Zn 33
Terminal type	Screw cage
Screw type	M3 with combi head (slotted, Philips Gr.1, Pozi)
Max. screw torque	1.0N/m
Max wire section	0.5-2.5mm ² (20AWG 14AWG)
Operating temperature	-25° to +85°C (-13° to +185°F)
UL rating	10A 300VAC
UL temperature	0° to +60°C (+32° to +140°F)

Drilling pattern



Wiring diagram



Approvals



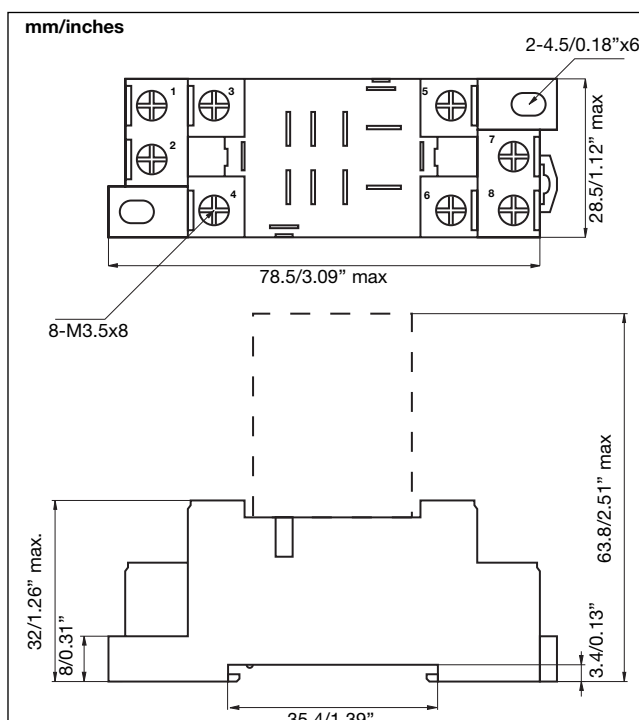
Box content: 10 sockets
 Box size: (W 100 x D 71 x H 140) mm Weight: 840g
 (W 3.94 x D 2.80 x H 5.51) inches Weight: 29.63oz

Optional Accessories (to be ordered separately if required)

Hold-down spring steel SZPY 35M (see on page 83)

Sockets for RPY Relays

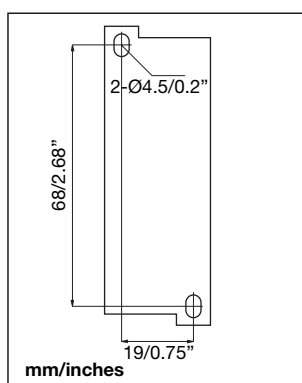
ZPY08C



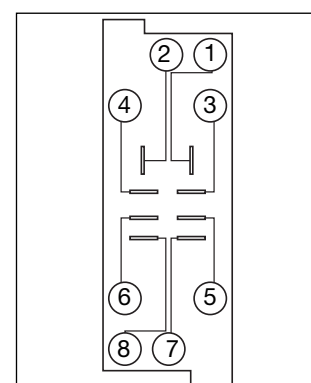
General data

Rated voltage	300VAC
Rated current	16A
Insulation voltage	>3kV
Socket material	PA66 + GF (V0)
Socket colour	Black
Contact material	Nickel Plated - CuSn
Terminal type	Screw cage
Screw type	M3 with combi head (slotted, Philips Gr.1, Pozzi)
Max. screw torque	1.0N/m
Max wire section	0.5-2.5mm ² (20AWG 14AWG)
Operating temperature	-25° to +85°C (-13° to +185°F)

Drilling pattern



Wiring diagram



Approvals



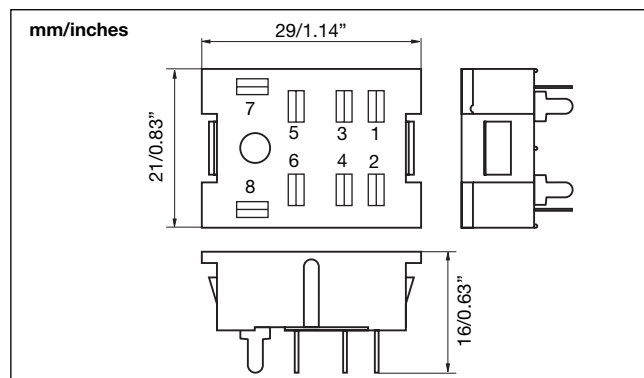
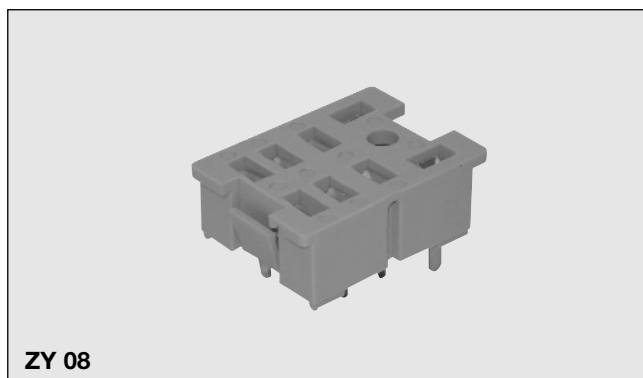
Box content: 10 sockets
 Box size: (W 160 x D 70 x H 80) mm Weight: 580g
 (W 6.30 x D 2.75 x H 3.15) inches Weight: 20.46oz

Optional Accessories (to be ordered separately if required)

Hold-down spring steel SZPY 35M (see on page 83)

Sockets for RPY Relays

ZY 08



General data

Rated voltage	300V
Rated current	16A
Insulation voltage	2kV
Operating temperature	-25° to +85°C (-13° to +185°F)
Socket material	ABS
Socket colour	RAL 7035 / Pantone 1C
Contact material	Copper tin plated CuSn ₆

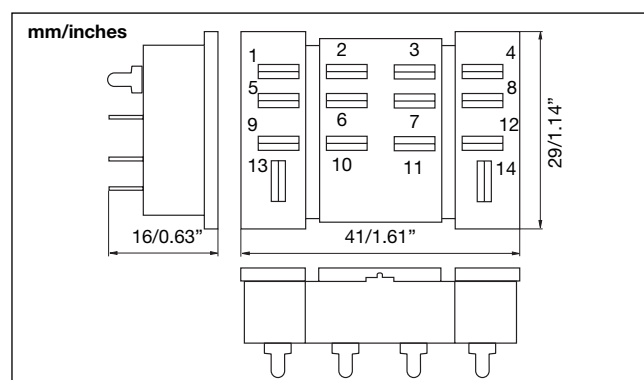
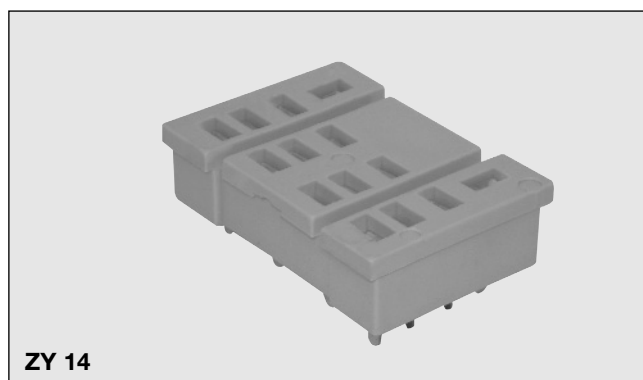
Approvals



Box content: 10 sockets
 Box size: (W 125 x D 30 x H 25) mm Weight: 100g
 (W 4.93 D 1.18 x H 0.98) inches Weight: 3.53oz

Sockets for RPY Relays

ZY 14



General data

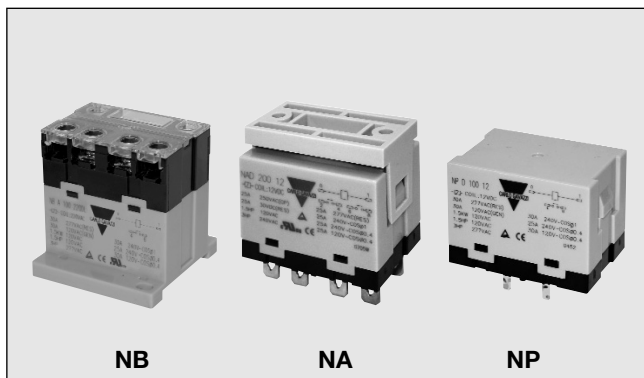
Rated voltage	300V
Rated current	16A
Insulation voltage	2kV
Operating temperature	-25° to +85°C (-13° to +185°F)
Socket material	ABS
Socket colour	RAL 7035 / Pantone 1C
Contact material	Copper tin plated CuSn ₆

Approvals



Box content: 10 sockets
 Box size: (W 125 x D 45 x H 30) mm Weight: 180g
 (W 4.93 D 1.77 x H 1.18) inches Weight: 6.35oz

Power Relays Type NA/NF/NP/NB Monostable



- Power relay
- Switching capacity 30A
- DC coils 6 to 110VDC
- AC coils 12 to 240VAC
- 1 or 2 normally open contact
- Reinforced insulation 4kV / 8 mm (0.31")
- Heavy load up to 8310VA
- Motor load up to 3HP @ 240VAC
- PCB or Fast-on terminal
- General purpose, industrial power application
- CE, TÜV, UL approved

Product Description

Relay high power output. It is sealed designed for vending machines, copiers and control equipment. Power and compressors load.

Approvals



Ordering Key

N B D 100 12 SE

Type _____
 Terminal version _____
 A = Faston no flange
 B = Bolt terminals
 F = Flange and faston terminals
 P = PCB
 Coil version (A=AC - D=DC) _____
 Contact code _____
 Coil code _____
 Options _____

Box content: 1 relay
 Box size: (W 75 x D 40 x H 60) mm Weight: 100g
 (W 2.95 x D 1.57 x H 2.36) inches Weight: 3.53oz
 Box size: (W 60 x D 55 x H 60) mm Weight: 120g
 (DIN rail mounting types) (W 2.36 x D 2.17 x H 2.36) inches Weight: 4.23oz

Type Selection

Contact configuration

1 normally open contact	(SPST {1-form A})
2 normally open contacts	(DPST {2-form A})

Contact rating

30A
25A

Contact code

100
200

Coil Characteristics, DC @ +20°C (+68°F)

Coil Code	Rated voltage VDC	Pick-up voltage VDC	Drop-out voltage VDC	Max voltage VDC	Coil resistance Ω $\pm 10\%$
6	6	4.50	0.9	6.6	18.9
12	12	9.00	1.8	13.2	75.0
24	24	18.00	3.6	26.4	303.0
48	48	36.00	7.2	52.8	1220.0
100	100	75.00	15	110.0	5260.0
110	110	82.50	16.5	121.0	6360.0

Coil Characteristics, AC @ +20°C (+68°F)

Coil Code	Rated voltage VAC	Pick-up voltage VAC	Drop-out voltage VAC	Max voltage VAC	Coil resistance Ω $\pm 10\%$
12	12	9.6	1.8	13.2	65.0
24	24	19.2	3.6	26.4	275.0
48	48	38.4	7.2	52.8	1100.0
115	100-120	96.0	18.0	132.0	4730.0
230	200-240	176.0	33.0	264.0	21000.0

Options

For NA relays

- Nil** = Standard with mounting clip (i.e. fig.1)
T = Test button and mechanical indicator (i.e. fig.1)

For NF relays

- Nil** = Standard top flange mounting (i.e. fig.2)
D = With DIN rail mounting (i.e. fig.3)
T = Test button and mechanical indicator (i.e. fig.2)

For NP relays

- Nil** = Standard without mounting clip (i.e. fig.4)
SE = With mounting clip (i.e. fig.5)

For NB relays (Protection cover for terminals always included)

- DE** = With DIN rail mounting (i.e. fig.8)
SE = With mounting clip (i.e. fig.6)
DL = With DIN rail mounting and LED indication (i.e. fig.8)
FL = Top flange mounting and LED indication (i.e. fig.7)
SL = With mounting clip and LED indication (i.e. fig.6)

Note: If not listed above option is not available.

Contact Characteristics

	100	200	Material	Silver alloy
Rating	30A	25A	Initial contact resistance	100mΩ max. (1A-24VDC)
UL rating	1.5HP / 120VAC 3HP / 240VAC 30A / 277VAC TV 10		Current	
			Max. switching current	30A
			Max. switching power	8310VA/840W
				25A
				6925VA/700W
Contact rating	30A/277VAC	25A/277VAC	Voltage	
with resistive load	30A/28VDC	25A/28VDC	Max. switching voltage	277VAC / 28VDC max.
with motor load @120VAC		1.5HP	Life	
@240VAC		3HP	Electrical life	1 x 10⁵ ops (1800 ops/h)
			Mechanical life	1 x 10⁶ ops (1800 ops/h)

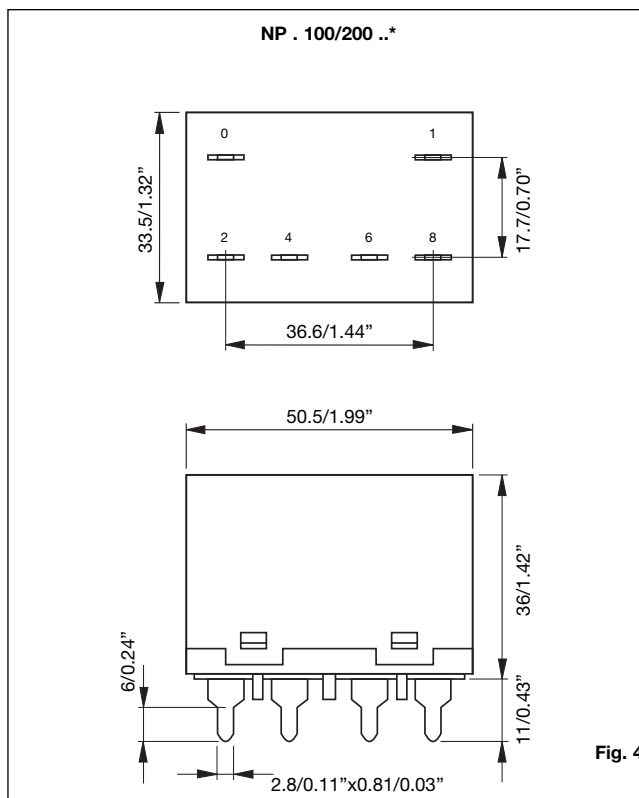
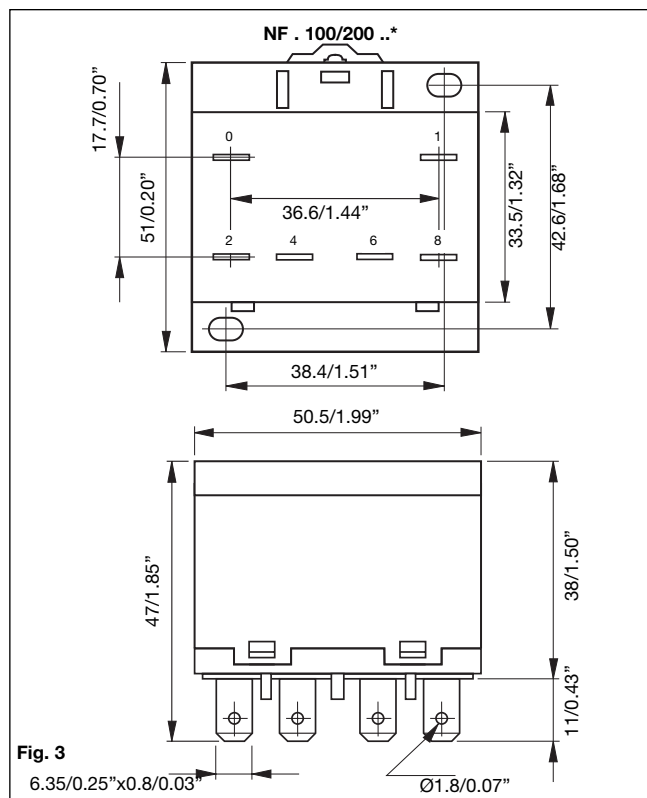
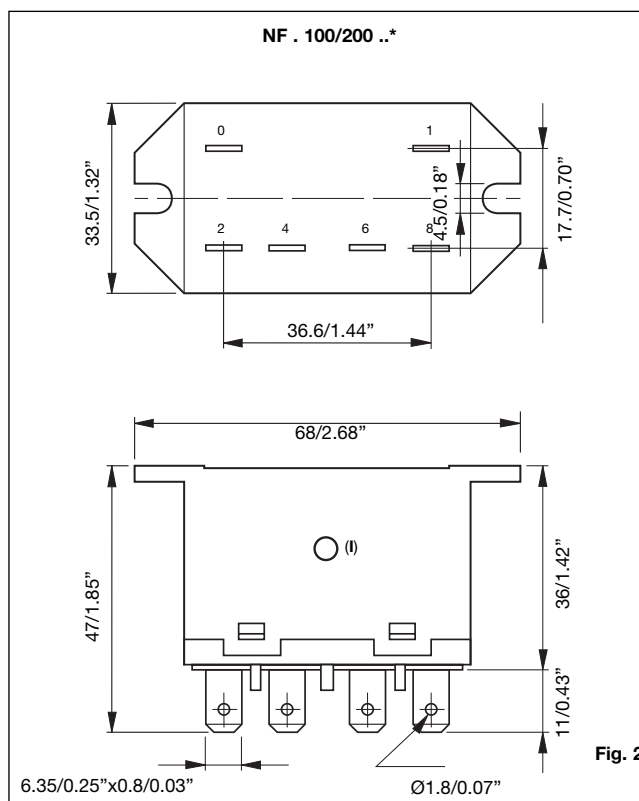
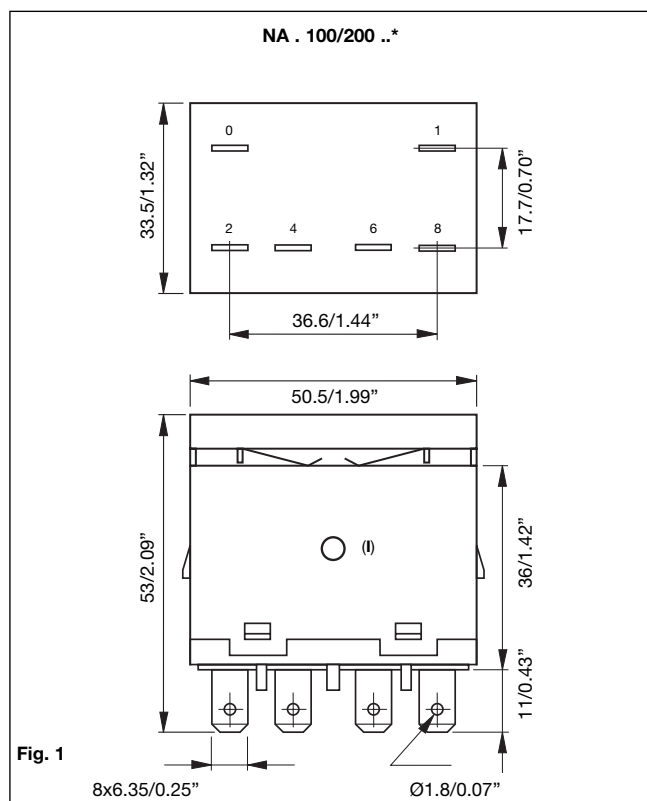
Insulation

Test voltage (1 min.)	
Open contacts	2000VAC
Contacts different polarity	2000VAC
Contacts/coil	4000VAC
Surge voltage	
Contacts/coil	10000VAC
Initial insulation resistance	
@ 500VDC	100MΩ

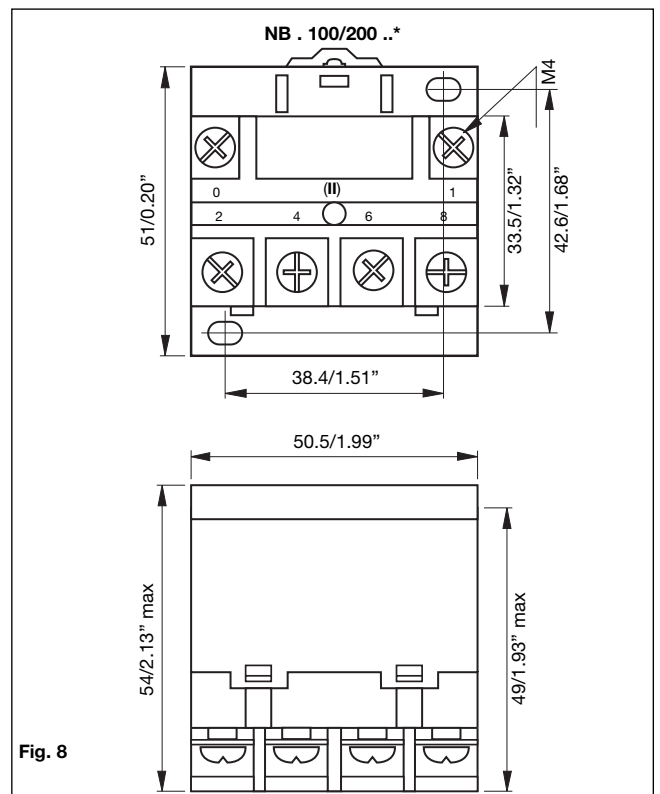
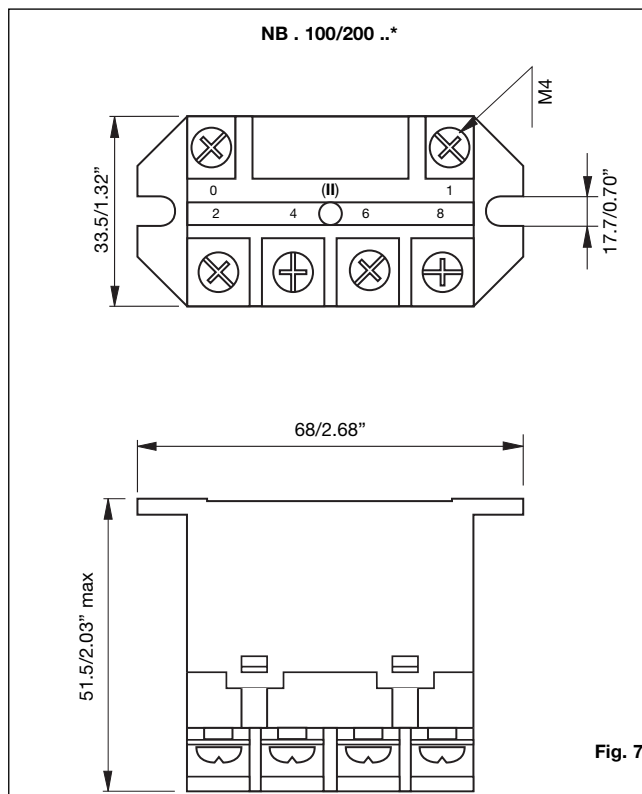
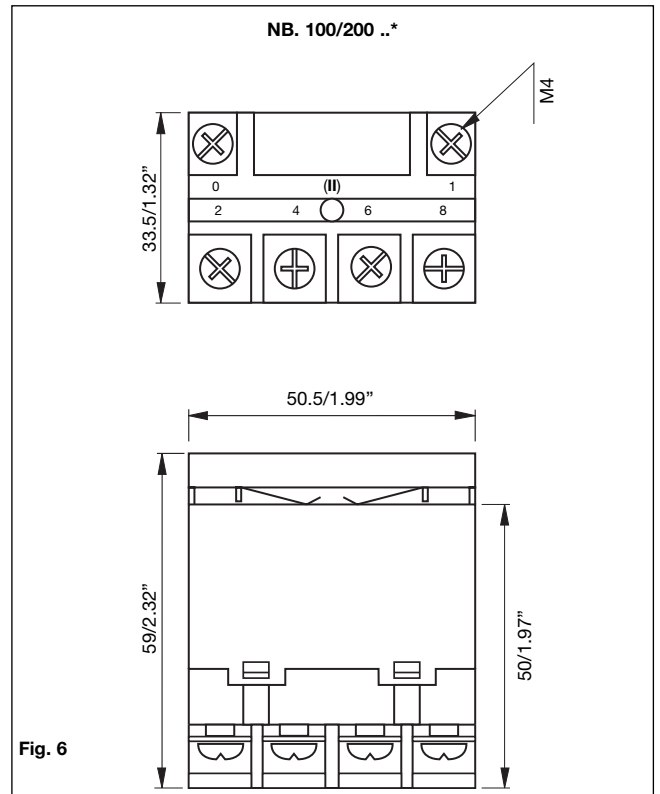
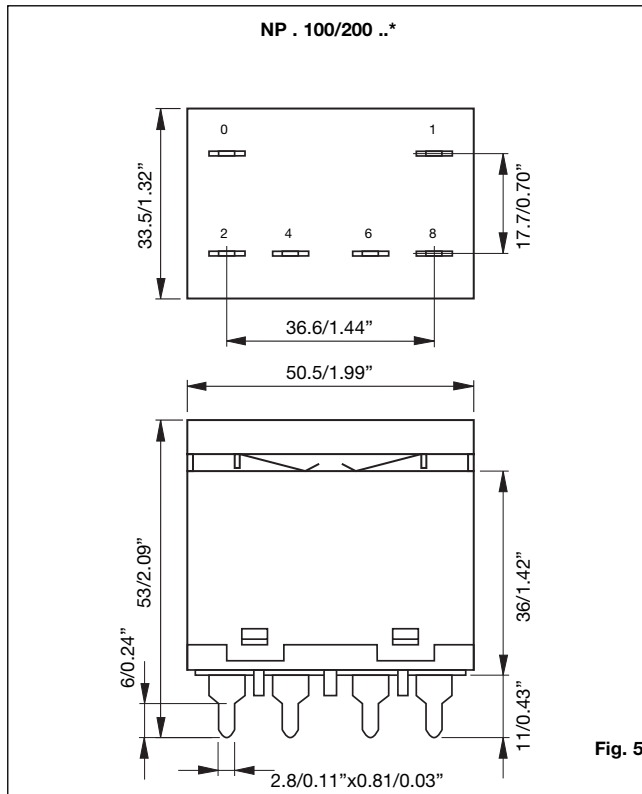
General Data

Vibration resistance	1.5mm p.p. 10 to 55Hz
Shock resist.	
Functional	98m/s² (malfunction) 10G
Destructive	980m/s² (mechanical) 100G
Humidity	98% +40°C (+104°F)
Weight	90 to 120g (3.17 to 4.23oz)
Construction	Dust cover
Nominal coil power	AC version 2.5VA DC version 1.9W
Operate time at nom. voltage	30ms
Release time at nom. voltage	30ms
Ambient temperature	-55° to +70°C (-67° to +158°F)
Temperature rise	+50°C (+122°F) max.
Vibration resistance	1.5mm (0.06") p.p. 10 to 50Hz

Dimensions mm/inches



* = On version 100 terminals number 2 and 8 are not present
(I) = Mechanical push button

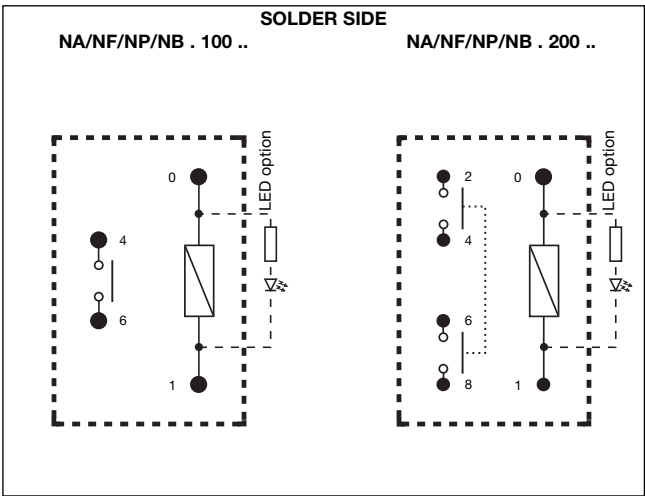


* = On version 100 terminals number 2 and 8 are not present

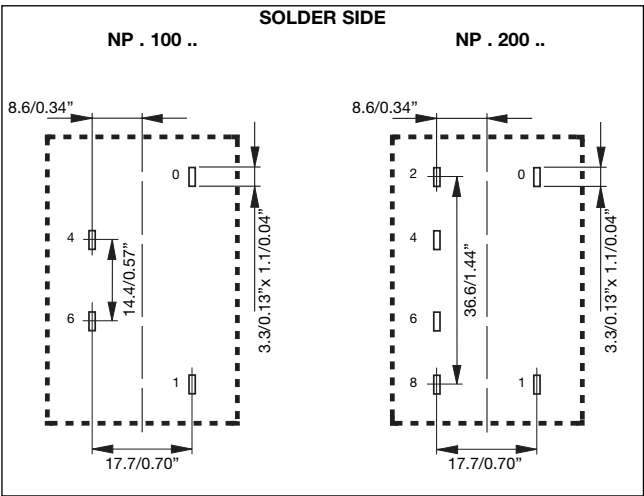
(I) = Mechanical push button

(II) = LED indication

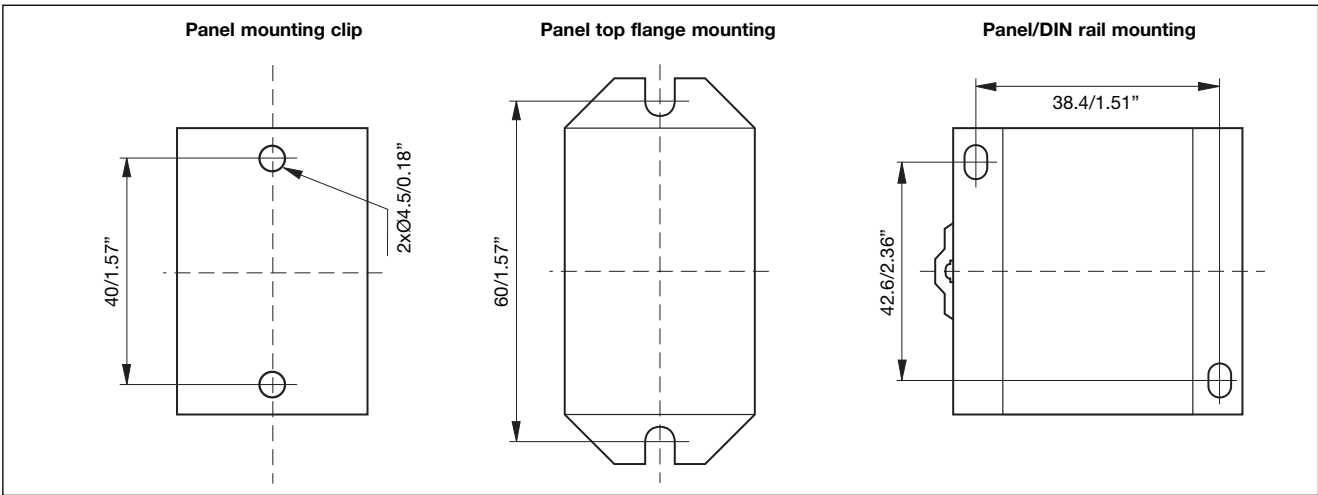
Wiring Diagram



Pin View mm/inches

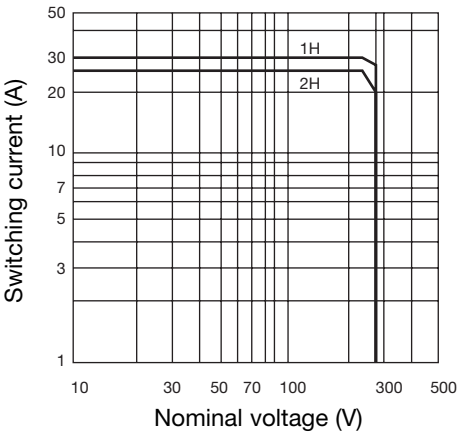


Drilling patterns mm/inches

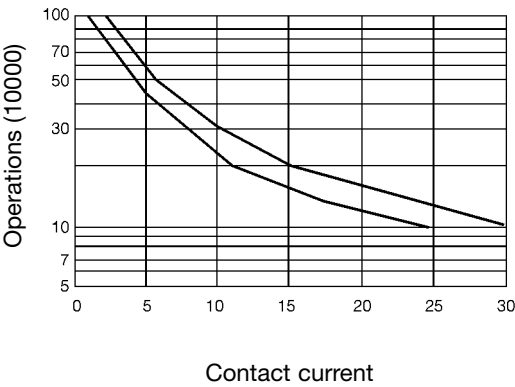


Diagrams

1 Contact rating

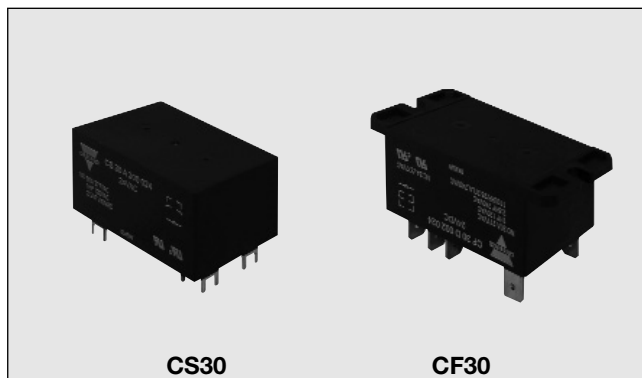


2 Life endurance



Power Relays Type CS30/CF30 Monostable

CARLO GAVAZZI



- Compressor control relay
- Switching capacity 30A
- DC coils 6 to 48VDC
- AC coils 24 to 277VAC
- 2 normally open contacts, 2 change over contacts
- Reinforced insulation 4kV / 8mm (0.31")
- Meets class F construction
- PCB or Fast-on terminal
- General purpose, power loads
- Standard as sealed
- CE, UL approved

Product Description

Relay high power output. vending machines, and
It is sealed designed for compressors load.

Approvals



The approvals stated are not generally applicable to all relay versions of a particular type.

Ordering Key

C S30 A 002 012

Type _____
Terminal version _____
(S30= Soldering - F30= Fast-on)
Coil version (A=AC - D=DC) _____
Contact code _____
Coil code _____

Box content: 20 relays
Box size: (W 290 x D 240 x H 40) mm Weight: 2.000g
(W 11.42 x D 9.45 x H 1.57) inches Weight: 70.55oz

Type Selection

Contact configuration

2 normally open contact	(DPST {2-form A})
2 change over contact	(DPDT {2-form C})

Contact rating

30A	200
30A	002

Contact code

Coil Characteristics, DC @ +20°C (+68°F)

Coil Code	Rated voltage VDC	Pick-up voltage VDC	Drop-out voltage VDC	Max. Allowable voltage DC	Coil resistance $\Omega \pm 10\%$
005	5	3.8	0.5	5.5	15.3
006	6	4.5	0.6	6.6	22
012	12	9.0	1.2	13.2	86
024	24	18.0	2.4	26.4	350
048	48	36.0	4.8	52.8	1390
110	110	83	11	121	7255

Coil Characteristics, AC @ +20°C (+68°F) 50/60Hz

Coil Code	Rated voltage VAC	Pick-up voltage VAC	Drop-out voltage VAC	Max. Allowable voltage AC	Coil resistance $\Omega \pm 10\%$
024	24	19.2	4.8	26.4	39
120	120	96.0	24.0	132.0	950
208B ¹	208	166.4	41.6	228.8	2841
220 ²	220	175	44.0	242.0	3800
240	240	192.0	48.0	264.0	3800
277	277	211.6	55.4	304.7	5485

¹ Only 60Hz
² Only 50Hz

Contact Characteristics

	200 (NO)	002 (NO)	(NC)
UL rating	30A - 277VAC 2.5HP - 240VAC 1HP - 120VAC TV 10	30A - 277VAC 2.5HP - 240VAC 1HP - 120VAC 110LRA / 25.3FLA	3A - 277VAC 2.5HP - 240VAC 1HP - 120VAC -
VDE rating	30A - 250VAC	30A - 250VAC	3A - 250VAC
Contact rating	30A - 277VAC	30A - 277VAC	3A - 277VAC
Material	AgSnO ₂	AgSnO ₂	
Initial contact resistance	50m Ω max. (1A-6VDC)	50m Ω max. (1A-6VDC)	
Current			
Max. switching current	30A	30A	
Max. switching power	8310VA	8310VA	
Voltage			
Max. switching voltage	30VDC / 277VAC	30VDC / 277VAC	
Life			
Electrical life	1 x 10 ⁵ ops/min.	1 x 10 ⁵ ops/min.	
Mechanical life	5 x 10 ⁶ ops/min.	5 x 10 ⁶ ops/min.	

Specifications are subject to change without notice. Pictures are just an example. For special features and/or customization, please ask to our sales network. 011010

Insulation

Test voltage (1 min.)

Open contacts
Contacts/coil
Contact/poles

4000Vrms
1500Vrms
2000Vrms

Surge voltage

Contacts/coil

10000VAC

Initial insulation resistance
@ 500VDC

1000MΩ

General Data

Nominal coil power

AC version 4VA
DC version 1.7W

Operate time at nom. voltage

15ms

Release time at nom. voltage

10ms

Ambient temperature

AC
DC

-40° to +65°C (-40° to +149°F)

-55° to +85°C (-67° to +185°F)

Vibration resistance

1.65mm (0.06") p.p. 10 to 55Hz

Temperature rise

AC
DC

85°C (+185°F) max.

60°C (+140°F) max.

Shock resist.

Malfunction
Mechanical

100m/s²

1000m/s²

Humidity

35% to 85%, +40°C

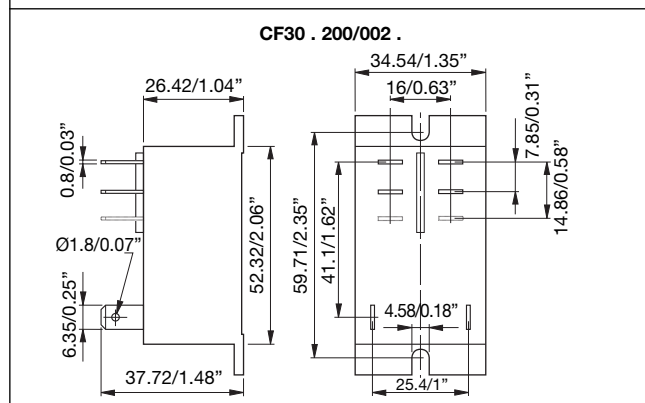
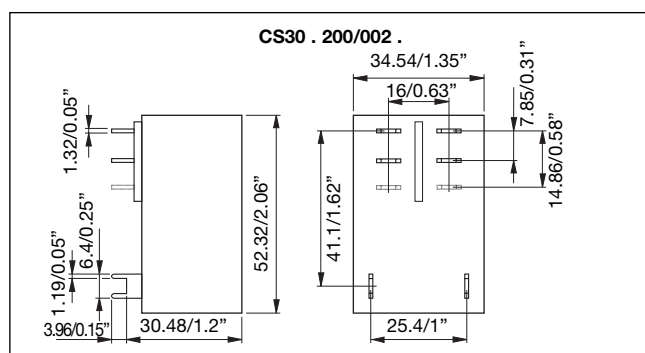
Weight

~86g (~3.03oz)

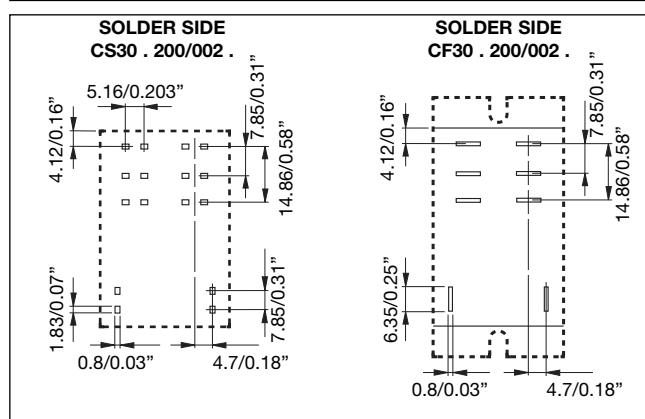
Enclosure

IP 67 Sealed

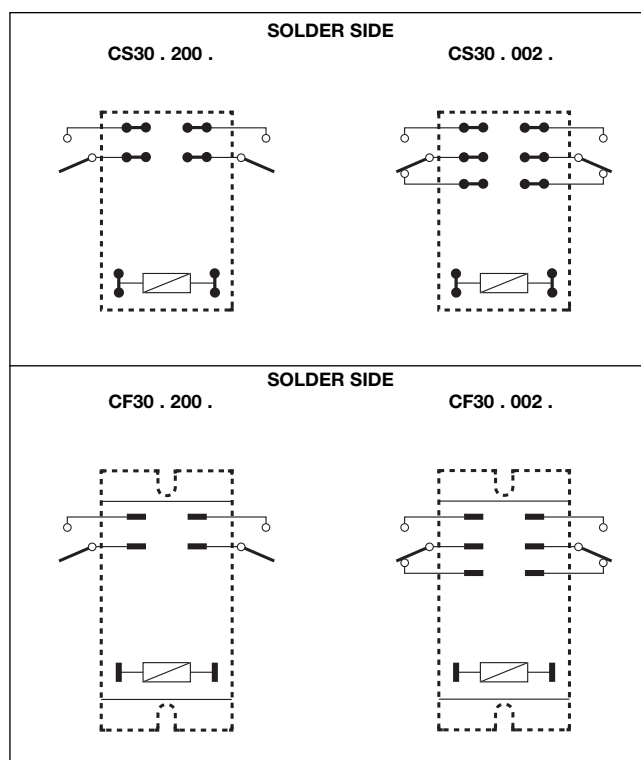
Dimensions mm/inches



Pin View mm/inches

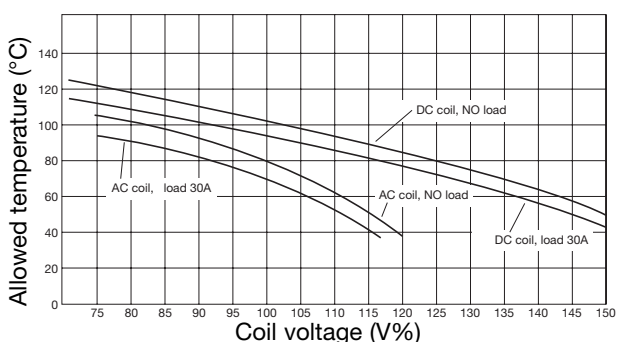


Wiring Diagram



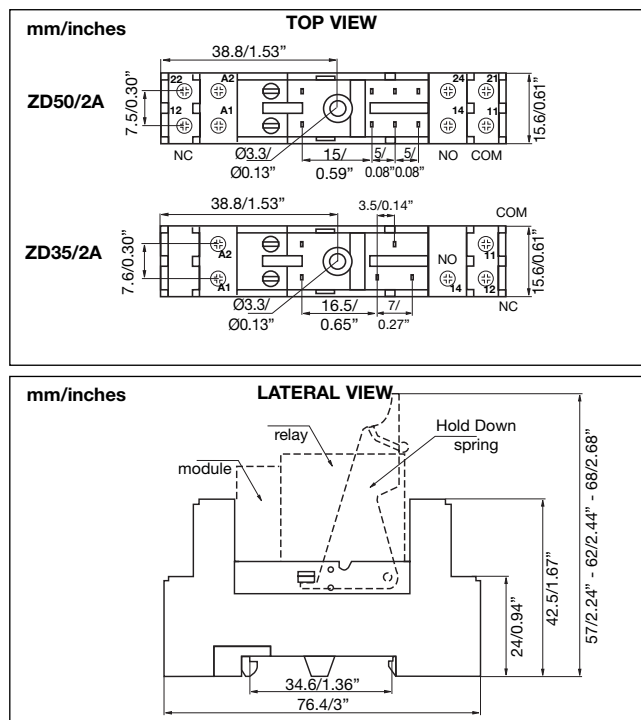
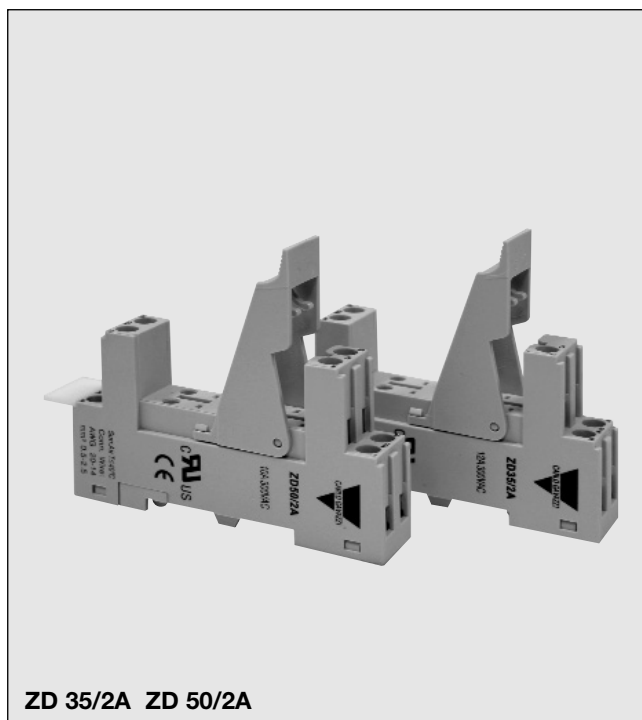
Diagram

1 Ambient temperature



Sockets for Miniature Relays

ZD 35/2A ZD 50/2A



General data

Plastic Material	PA66 +GF - V2
Contact Material	Cu Ni
Contact surface	5µm tin plated
Terminals	8µm zinc plated steel
Terminal type	Screw cage
Screws	5µm nickel plated 8.8 steel
Screw type	M3 with combi head (slotted, Philips Gr.1, Pozi)
Ratings @ 300VAC	12A (ZD 35/2A) 10A x 2 (ZD 50/2A)
UL Rating 300VAC	12A (ZD 35/2A) 10A x 2 (ZD 50/2A)

Operating temp.	-25° to +85°C (-13° to +185°F)
Standard colour	RAL 7035 / Pantone Grey 1C
Insulation voltage	4000V
Between Coil and Contacts	2500V
Between Contacts	
Creepage and Clearance	Gr.C250, VDE 0110b / 2.79
Maximum Screw torque	1N/m
Max Wire section	0.5-2.5mm ² (20AWG-14AWG)
Flex / compact wire	2 x 1.5mm ² (16AWG)
Cable End	
Terminal Protection degree	IP 20 (EN60529)

Note:

Hold down spring not included, remember to order proper one.

Relay Type	Socket P.N.	Hold Down Spring
MZ 100/001 16A MZ 200/002	ZD 50/2A	SZD 25
MZ 100/001 5/10A	ZD 35/2A	SZD 25

Approvals



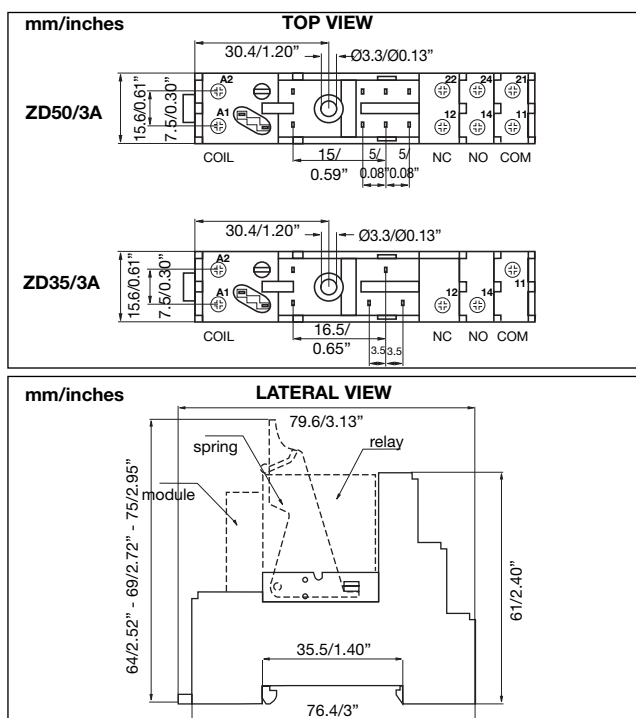
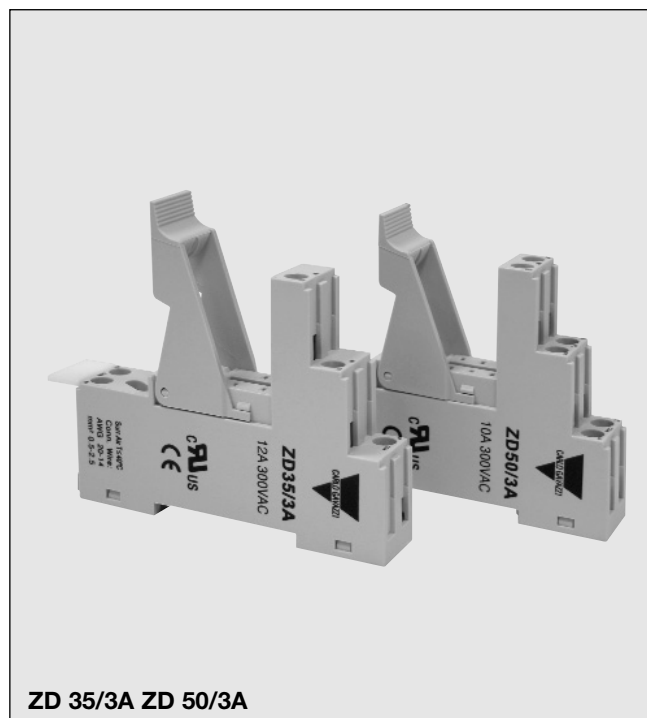
Box content: 20 sockets, 20 labels
 Box size: (W 185 x D 160 x H 50) Weight: ~800g
 (W 7.28 x D 6.30 x H 1.97) inches Weight: ~28.2oz

Optional Accessories (to be ordered separately if required)

Labels	6.73.00.61.2
Bridging bar	ZD-BB (see on page 85)
Modules	(see on page 79)
Hold Down Springs	(see on page 84)

Sockets for Miniature Relays

ZD 35/3A ZD 50/3A



General data

Plastic Material	PA66 +GF - V2
Contact Material	Cu Ni
Contact surface	5µm tin plated
Terminals	8µm zinc plated steel
Terminal type	Screw cage
Screws	5µm nickel plated 8.8 steel
Screw type	M3 with combi head (slotted, Philips Gr.1, Pozi)
Ratings @ 300VAC	12A (ZD 35/3A) 10A x 2 (ZD 50/3A)
UL Rating 300VAC	12A (ZD 35/3A) 10A (ZD 50/3A)

Operating temp.	-25° to +85°C (-13° to +185°F)
Standard colour	RAL 7035 / Pantone Grey1C
Insulation voltage	4000V
Between Coil and Contacts	2500V
Between Contacts	
Creepage and Clearance	Gr.C250, VDE 0110b / 2.79
Maximum Screw torque	1N/m
Max Wire section	0.5-2.5mm ² (20AWG 14AWG)
Flex / compact wire	2 x 1.5mm ² (16AWG)
Cable End	
Terminal Protection degree	IP 20 (EN60529)

Approvals



Note:
Hold down spring not included, remember to order proper one.

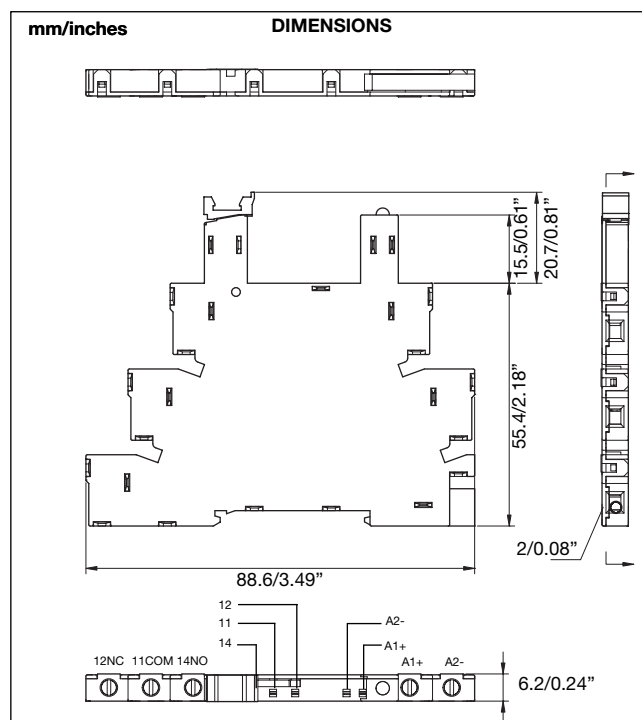
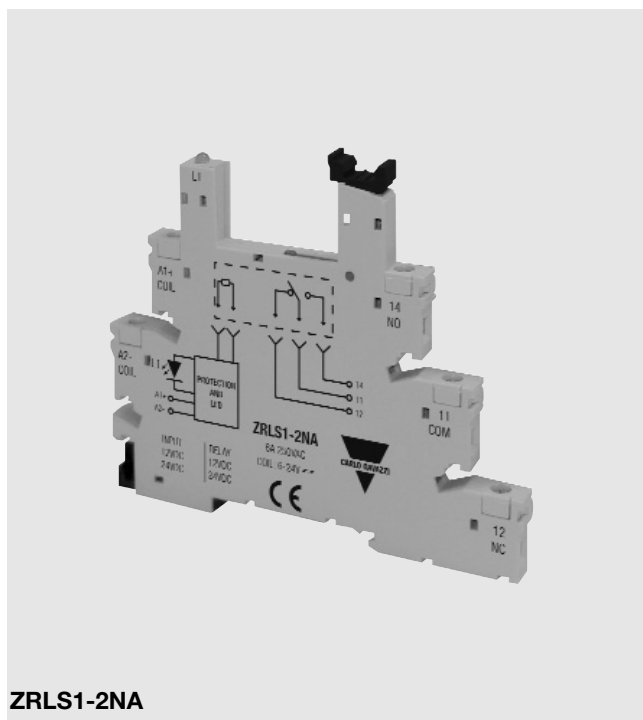
Relay Type	Socket P.N.	Hold Down Spring
MZ 100/001 16A MZ 200/002	ZD 50/3A	SZD 25
MZ 100/001 5/10A	ZD 35/3A	SZD 25

Box content: 20 sockets, 20 labels	
Box size: (W 185 x D 165 x H 70) mm	Weight: ~950g
(W 7.28 x D 6.50 x H 2.75) inches	Weight: ~33.5oz

Optional Accessories (to be ordered separately if required)

Labels	6.73.00.61.2
Bridging bar	ZD-BB (see on page 85)
Modules	(see on page 79)
Hold Down Springs	(see on page 84)

ZRLS1 NA



General data

Rated voltage	300VAC
Rated current	6A
Insulation voltage	>3kV
Protection degree	IP 20 B
Socket material	PA66+GF (V0)
Socket colour	RAL 7035 / Pantone 1C
Contacts material	CuSn 6.5-0.1
Contacts surface	tin-plated
Operating temp.	-40° to +70°C (-40° to 158°F)
Terminal type	Screw cage
Max Wire section	
Flex / compact wire	2 x 2.5mm² (14AWG)
Cable End	2 x 1.5mm² (16AWG)

Output data

Max voltage	300VAC max
Max current	6A

Input data and Ordering code

ZRLS1-2NA Input Coil rate*	from 6 to 24VDC from 6 to 24VDC
ZRLS1-3NA Input Coil rate*	from 6 to 24VAC/VDC from 6 to 24VDC
ZRLS1-4NA Input Coil rate*	120VAC 24VDC
ZRLS1-5NA Input Coil rate*	230VAC 24VDC

Approvals



Box content: 20 sockets	
Box size: (W 15 x D 8.5 x H 9.5) mm	Weight: 600g
(W 0.59 x D 0.33 x H 0.37) inches	Weight: 21.16oz

Optional Accessories (to be ordered separately if required)

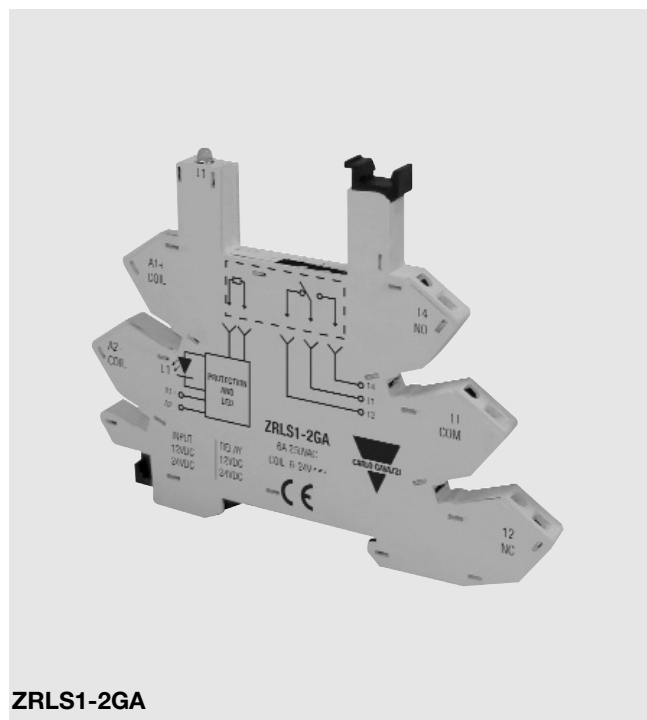
Labels	ZRLS-LAB (see on page 86)
Separator	ZRLS-DIV (see on page 86)
Bridging bar	ZRLS-BB (see on page 85)

* The coil rate value is the socket output voltage. The relay to be fitted should have the same coil voltage.

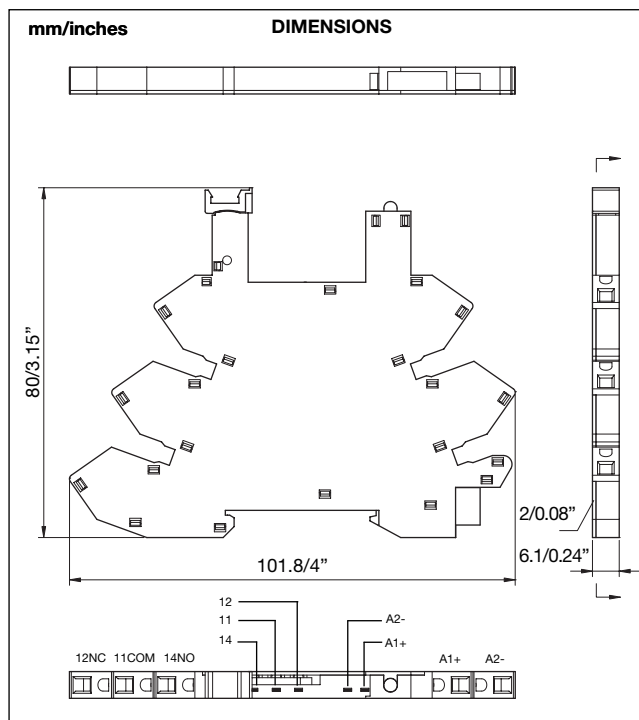
Specifications are subject to change without notice. Pictures are just an example. For special features and/or customization, please ask to our sales network. 011010

Sockets for RLS Relays

ZRLS1 GA



ZRLS1-2GA



General data

Rated voltage	300VAC
Rated current	6A
Insulation voltage	>3kV
Protection degree	IP 20 B
Socket material	PA66+GF (V0)
Socket colour	RAL 7035 / Pantone 1C
Contacts material	CuSn 6.5-0.1
Contacts surface	tin-plated
Terminal type	Spring loaded terminal
Operating temp.	-40° to +70°C (-40° to 158°F)
Max Wire section	
Flex / compact wire	2 x 2.5mm ² (14AWG)
Cable End	2 x 1.5mm ² (16AWG)

Output data

Max voltage	300VAC max
Max current	6A

Input data and Ordering code

ZRLS1-2GA	
Input	from 6 to 24VDC
Coil rate*	from 6 to 24VDC
ZRLS1-3GA	
Input	from 6 to 24VAC/VDC
Coil rate*	from 6 to 24VDC
ZRLS1-4GA	
Input	120VAC
Coil rate*	24VDC
ZRLS1-5GA	
Input	230VAC
Coil rate*	24VDC

Approvals



Box content: 20 sockets	
Box size: (W 15 x D 8.5 x H 9.5) mm	Weight: 600g
(W 0.59 x D 0.33 x H 0.37) inches	Weight: 21.16oz

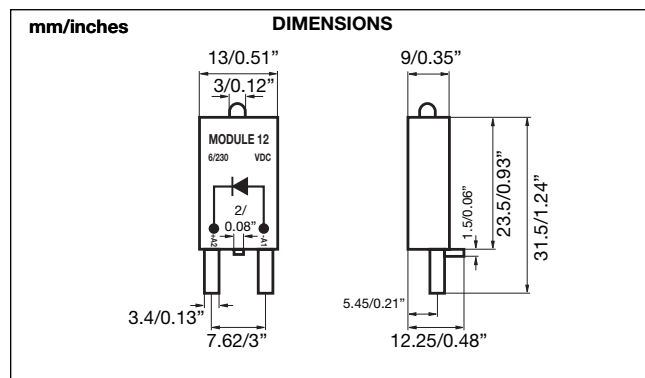
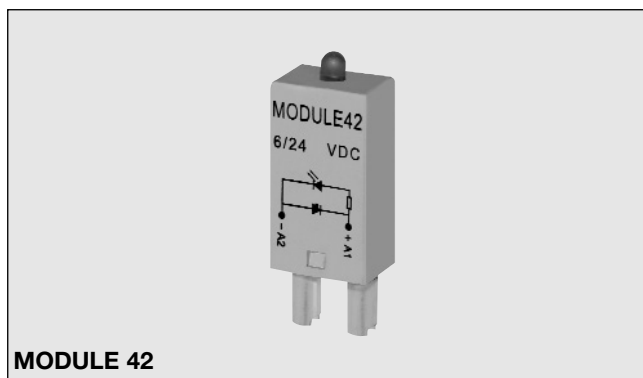
Optional Accessories (to be ordered separately if required)

Labels	ZRLS-LAB (see on page 86)
Separator	ZRLS-DIV (see on page 86)
Bridging bar	ZRLS-BB (see on page 85)

* The coil rate value is the socket output voltage. The relay to be fitted should have the same coil voltage.

Optional Function Modules

Modules for ZMI and ZD sockets



Approvals



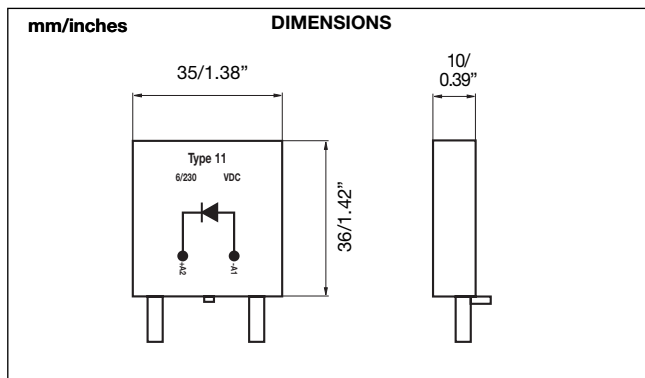
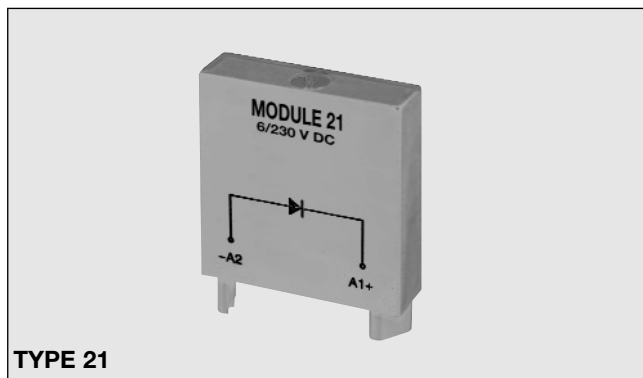
General data

Module material	PA66+GF (V0)
Module colour	RAL 7035 / Pantone 1C

Packaging

Box content: 1 bag, 100pcs.
 Box size: W 160 x D 70 x H 80 mm Weight: ~350g
 (W 6.30 x D 2.75 x H 3.15) inches Weight: ~12.3oz

Modules for ZPD sockets



Approvals



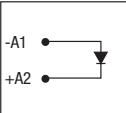
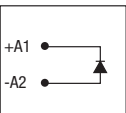
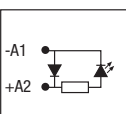
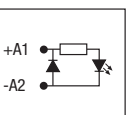
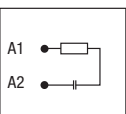
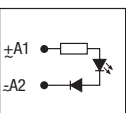
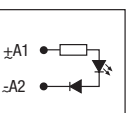
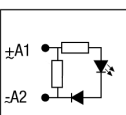
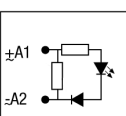
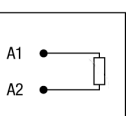
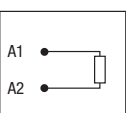
General data

Module material	PA66+GF (V0)
Module colour	RAL 7035 / Pantone 1C

Packaging

Box content: 1 bag, 20pcs
 Weight: ~150g (5.29oz)

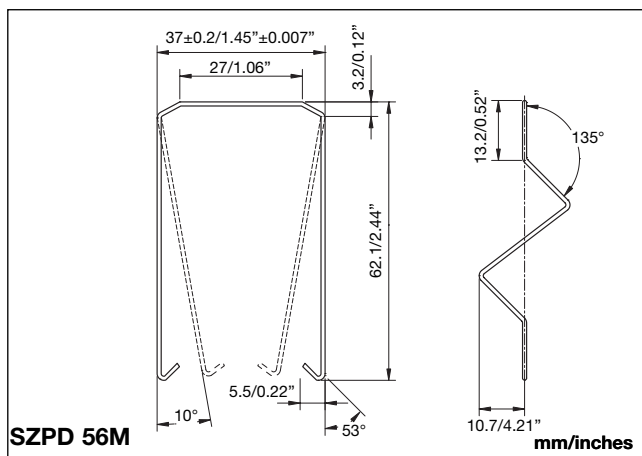
Types and electrical configurations

Diagram	Type	Description	Operating voltage	LED Colour	Ordering code		Notes	
					ZMI, ZD, ZDM Sockets	ZPD9, ZPD11		
	12	Free wheeling diode A2 +	6 / 230VDC	n.a.	MODULE12	MODULE11	Only for DC relays	
	22	Free wheeling diode A1 +	6 / 230VDC	n.a.	MODULE22	MODULE21		
	32	Free wheeling diode A2 +, with LED	6 / 24VDC	Red	MODULE32	n.a.		
			24 / 60VDC		MODULE32B			
			110 / 230VDC		MODULE32C			
			6 / 24VDC	Green**	MODULE32/G			
			24 / 60VDC		MODULE32B/G			
			110 / 230VDC		MODULE32C/G			
	42	Free wheeling diode A1 +, with LED	6 / 24VDC	Red	MODULE42			
			24 / 60VDC		MODULE42B			
			110 / 230VDC		MODULE42C			
			6 / 24VDC	Green**	MODULE42/G			
			24 / 60VDC		MODULE42B/G			
			110 / 230VDC		MODULE42C/G			
	52	RC Filter	110/240VAC	n.a.	MODULE52	MODULE51	Only for AC relays	
		RC Filter	6 / 24VAC		MODULE52B	MODULE51B		
		RC Filter	24 / 60VAC		MODULE52D	MODULE51D		
	62	Signalling LED	6 / 24V	Red	MODULE62	n.a.	Can work with AC and DC Relays	
	92		24 / 60V		MODULE62E			
	62	Signalling LED	110 / 230V	Green**	MODULE92			
			6 / 24V		MODULE62/G			
			24 / 60V		MODULE62E/G			
	62	Signalling LED, with Resistor	110 / 230V	Red	MODULE92/G			
			6 / 24V		MODULE62C			
			24 / 60V		MODULE62D			
	62	Signalling LED, with Resistor	110 / 230V	Green**	MODULE92C			
			6 / 24V		MODULE62C/G			
			24 / 60V		MODULE62D/G			
	72	Resistor	110 / 230VAC	n.a.	MODULE62C/G			MODULE71
			6 / 24VAC		MODULE72	MODULE71A		
			115VAC		MODULE72A			
	82	Resistor	230VAC	n.a.	MODULE82	MODULE81		
			110 / 230VAC		MODULE102	n.a.		

** Non standard devices normally not in stock and production upon request

Optional Springs for ZPD series

SZPD 56M



General data

Spring material

Stainless steel

Packaging

Box content:

1 plastic bag, 10pcs.

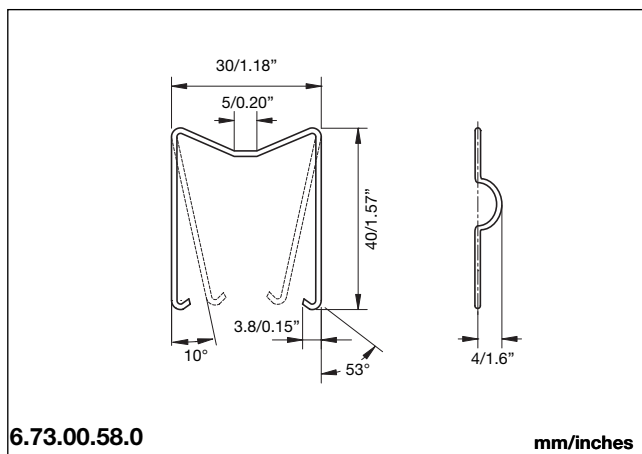
Weight:

~10g (0.36oz)

RoHS
COMPLIANT

Optional Springs for ZC series

6.73.00.58.0



General data

Spring material

Stainless steel

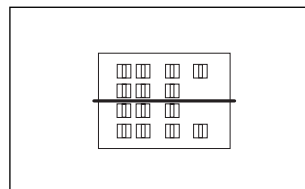
Packaging

Box content:

1 plastic bag, 10pcs.

Weight:

~5g (0.18oz)



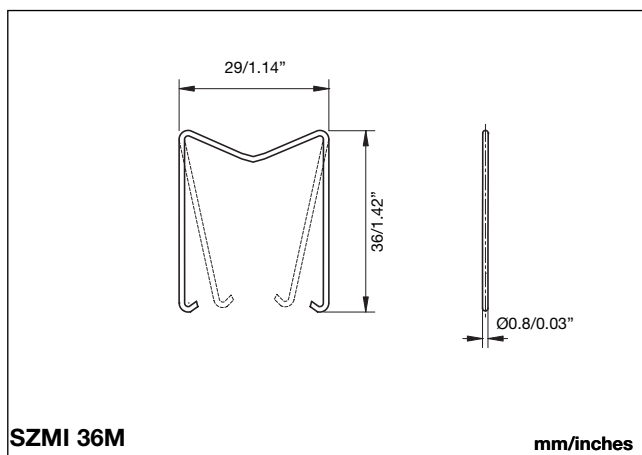
Mounting position for sockets:

ZC 15/2 - ZC15/2A

ZC 15/4 - ZC15/4A

RoHS
COMPLIANT

SZC 36M



General data

Spring material

Stainless steel

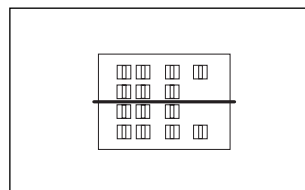
Packaging

Box content:

1 plastic bag, 10pcs.

Weight:

~5g (0.18oz)



Mounting position for sockets:

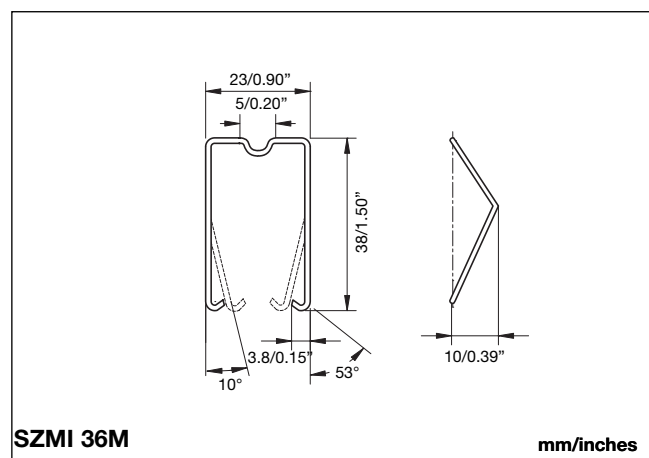
ZC 15/2 - ZC15/2A

ZC 15/4 - ZC15/4A

RoHS
COMPLIANT

Optional Springs for ZMI series, ZR08 and ZDM14A

SZMI 36M



General data

Spring material

Stainless steel

Packaging

Box content:

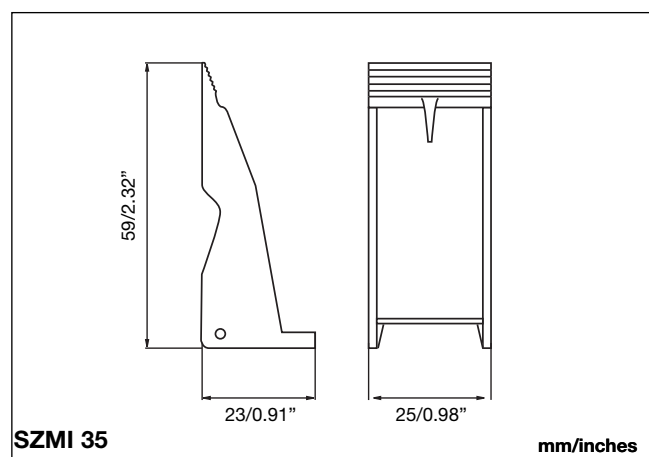
1 plastic bag, 10pcs.

Weight:

~5g (0.18oz)



SZMI 35



General data

Spring material

PA66 + GF (V0)

Spring colour

RAL 7035 / Pantone 1C

Packaging

Box content:

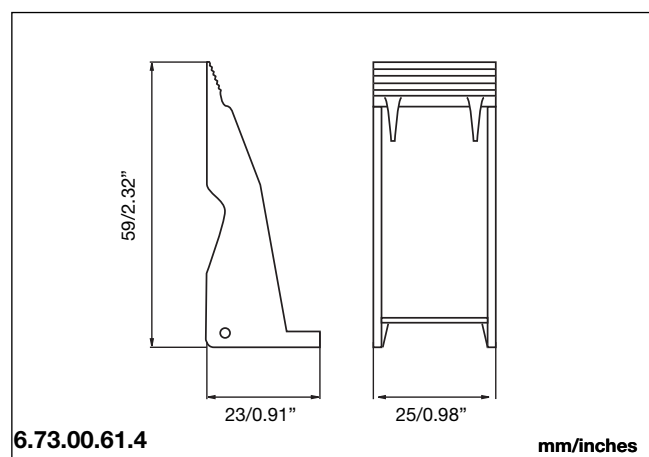
1 plastic bag, 10pcs.

Weight:

~20g (0.70oz)



6.73.00.61.4



General data

Spring material

PA6 + GF (V2)

Spring colour

RAL 7035 / Pantone 1C

Packaging

Box content:

1 plastic bag, 10pcs.

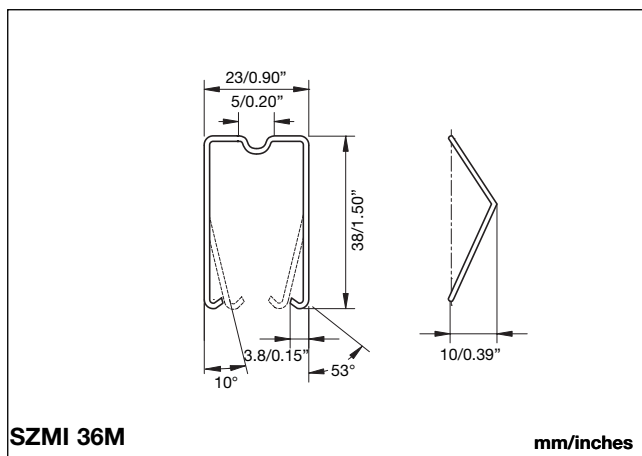
Weight:

~20g (0.70oz)



Optional Springs for ZY series

SZMI 36M



General data

Spring material

Stainless steel

Packaging

Box content:

1 plastic bag, 10pcs.

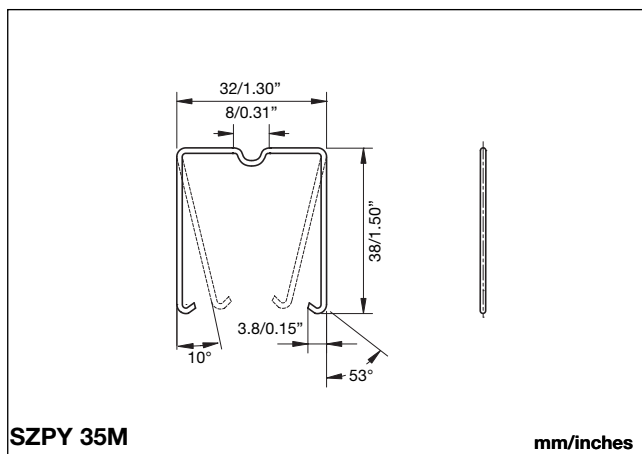
Weight:

~5g (0.18oz)

RoHS
COMPLIANT

Only for ZY08

SZY 35M



General data

Spring material

Stainless steel

Packaging

Box content:

1 plastic bag, 10pcs.

Weight:

~5g (0.18oz)

RoHS
COMPLIANT

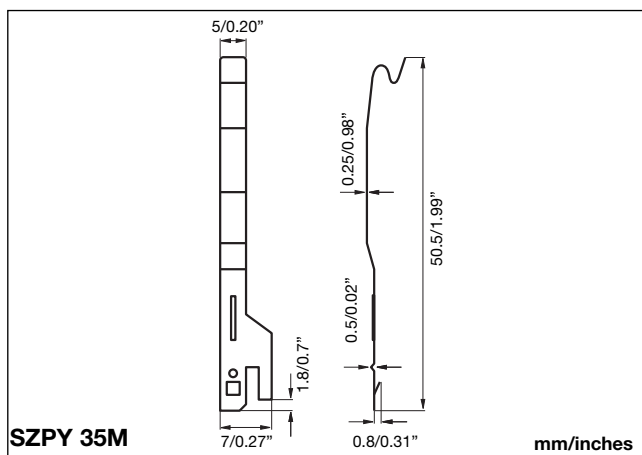
Only for ZY14

Note:

If the relay has the test button option, it is not possible to use the spring.

Optional Springs for ZPY series

SZPY 35M



General data

Spring material

Stainless steel

Packaging

Box content:

1 plastic bag, 10pcs.

Weight:

~10g (0.36oz)

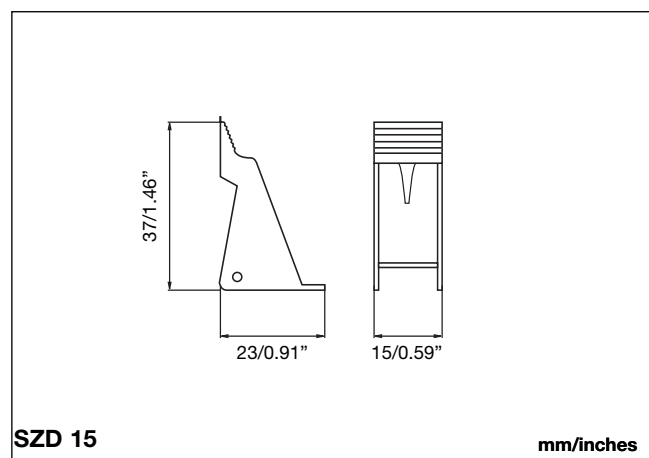
RoHS
COMPLIANT

Note:

For each relay/socket are required at least 2 springs.
Up to 4 springs can be mounted.

Optional Springs for ZD series

SZD 15



General data

Spring material	PA66 + GF (V0)
Spring colour	RAL 7035 / Pantone 1C

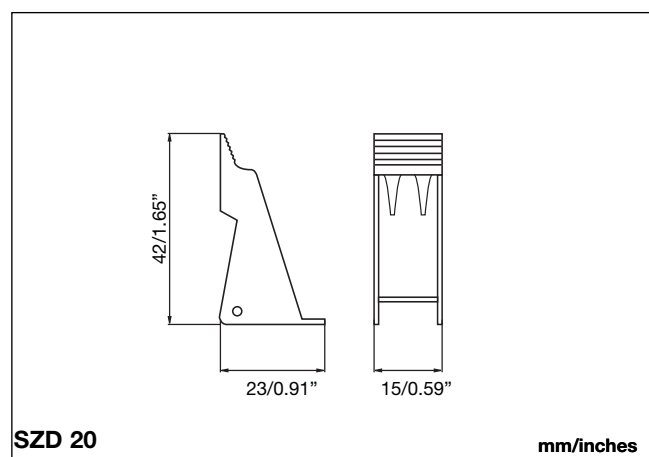
Packaging

Box content:	1 plastic bag, 10pcs.
Weight:	~20g (0.70oz)



Hold down spring for 15÷16mm
(0.59÷0.63inches) high relay

SZD 20



General data

Spring material	PA66 + GF (V0)
Spring colour	RAL 7035 / Pantone 1C

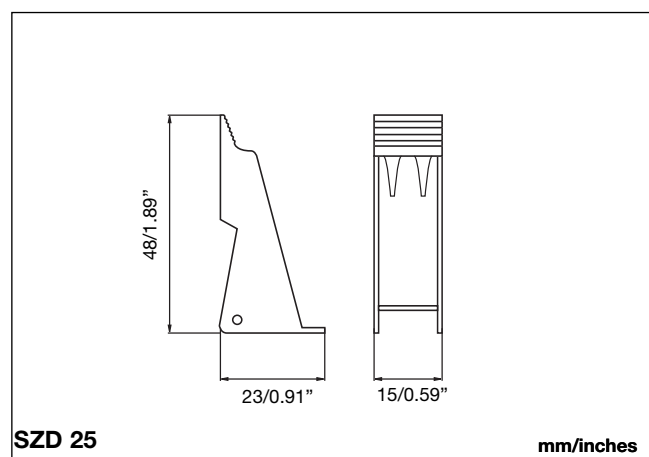
Packaging

Box content:	1 plastic bag, 10pcs.
Weight:	~20g (0.70oz)



Hold down spring for 20÷21mm
(0.79÷0.83inches) high relay

SZD 25



General data

Spring material	PA66 + GF (V0)
Spring colour	RAL 7035 / Pantone 1C

Packaging

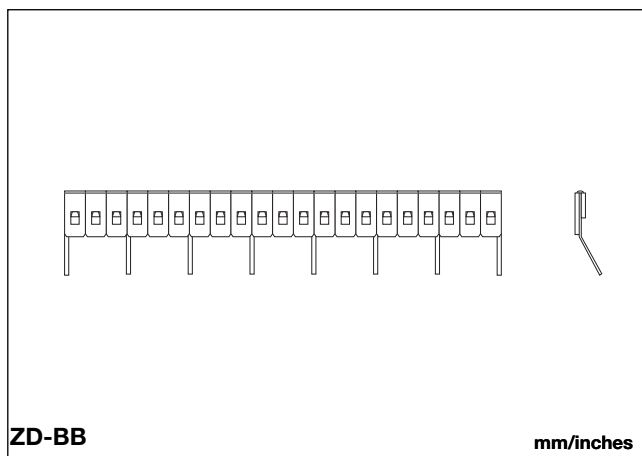
Box content:	1 plastic bag, 10pcs.
Weight:	~20g (0.70oz)



Hold down spring for 25÷28mm
(0.98÷1.10inches) high relay

Optional sockets bridging bars

ZD-BB



General data

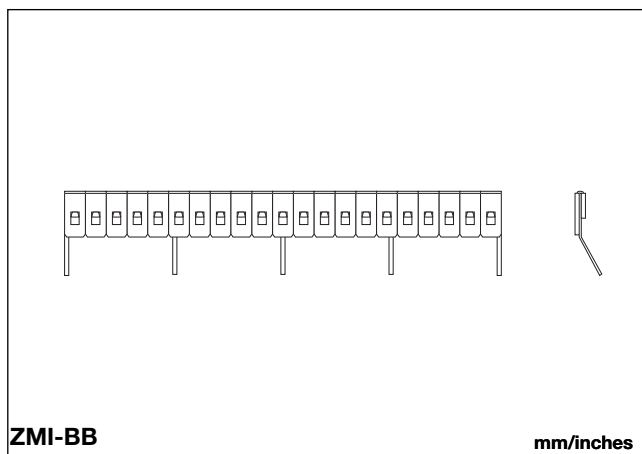
Plastic insulator material	PA66 + GF (V0)
Plastic insulator colour	Black
Metal jumper	Tinned copper

Packaging

Box content:	1 plastic bag, 10pcs.
Weight:	~50g (~1.76oz)



ZMI-BB



General data

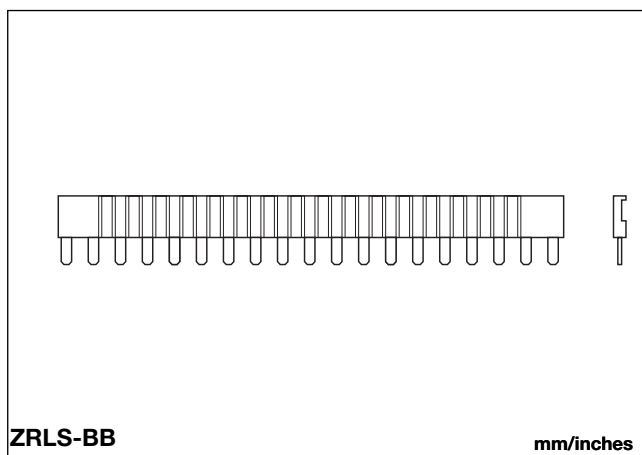
Plastic insulator material	PA66 + GF (V0)
Plastic insulator colour	Black
Metal jumper	Tinned copper

Packaging

Box content:	1 plastic bag, 10pcs.
Weight:	~50g (~1.76oz)



ZRLS-BB



General data

Plastic insulator material	PA66 + GF (V0)
Plastic insulator colour	Black
Metal jumper	Tinned copper

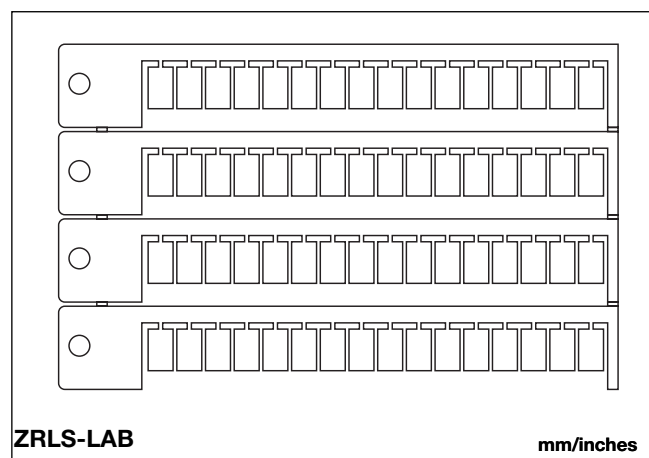
Packaging

Box content:	1 plastic bag, 10pcs.
Weight:	~50g (~1.76oz)



Optional labels for ZRLS1-NA and ZRLS1-GA

ZRLS-LAB



General data

Plastic labels material	Polycarbonate (PC)
Plastic labels colour	White

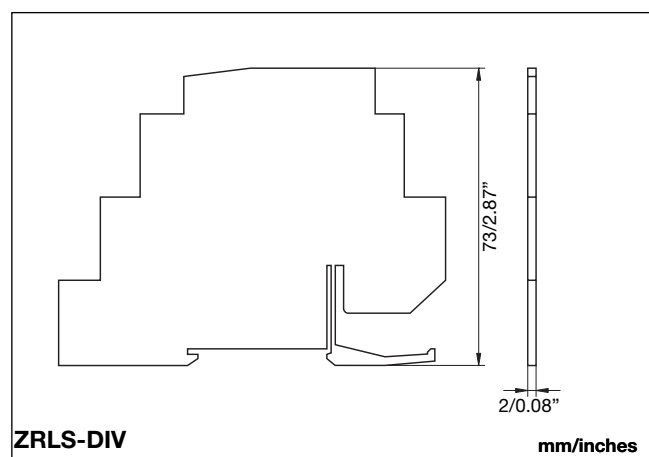
Packaging

Box content:	1 plastic bag, 10pcs.
Weight:	~50g (~1.76oz)



Optional separator for ZRLS1-NA and ZRLS1-GA

ZRLS-DIV



General data

Plastic separator material	PA66
Plastic separator colour	RAL 7035 / Pantone 1C

Packaging

Box content:	1 plastic bag, 10pcs.
Weight:	~50g (~1.76oz)



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Belluno - **ITALY**

Carlo Gavazzi Controls SpA
Sensors Division
Castel Maggiore (BO) - **ITALY**

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