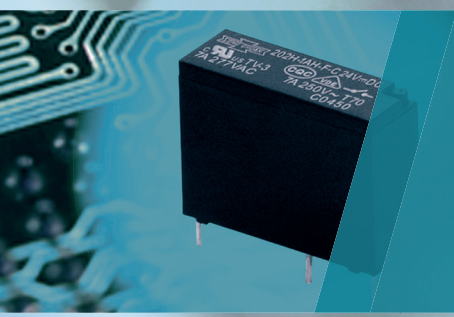
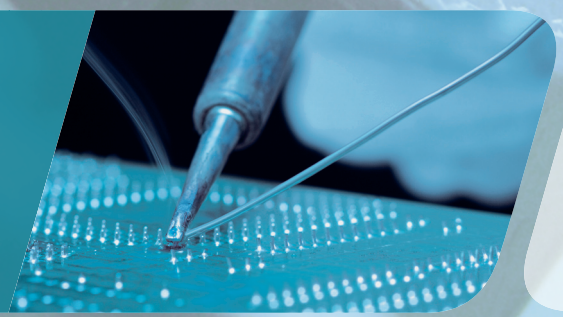
SONG CHUAN

General purpose relay catalog





Song Chuan is one of the world's leading manufacturers of electro-mechanical components. For over 30 years, we have been developing, making and marketing product solutions for renowned companies all over the world. Quickly, individually and reliably. Our European sales headquarters is located right in the heart of Germany.

Song Chuan is certified in accordance with:
ISO 14001, ISO 9001, TS 16949

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Relay Catalog

SONG CHUAN EUROPE

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General Purpose Relays

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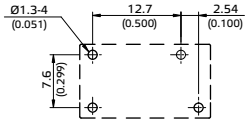
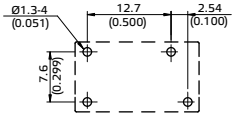
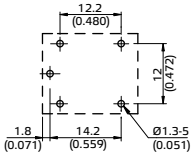
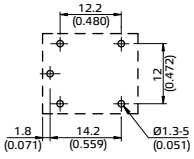
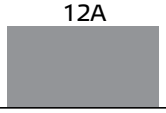
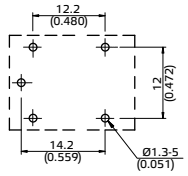
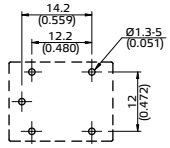
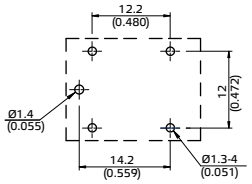
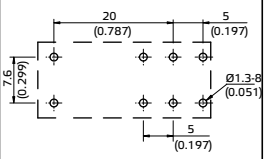
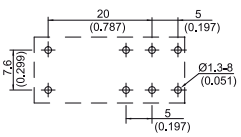
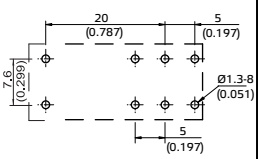
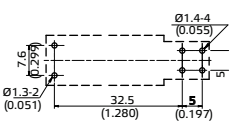
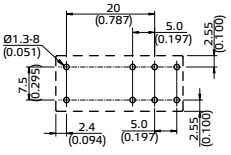
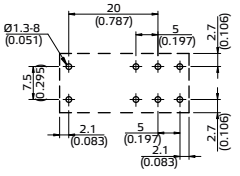
Relay Selection Chart

Type		307	835	899	833H
Photo / Description					
Outline (L×W×H) mm No including terminals		18.8x10.6x15.6	18.8x10.6x15.6	19x15.5x15	19x15.5x15
Contact configuration		1A	1A	1A、1B、1C	1A、1B、1C
Max. Allowable Contact current (A)	45 40 35 30 25 20 15 10 5 3	8A	10 A	10A	10A
Contact rating Resistive load		307：5A 240VAC 307H: 8A 240VAC 10A 240VAC(※) 12A 125VAC(※)	835：10A 240VAC 835L：8A 240VAC 835NL：5A 240VAC	NO：7A 240VAC 10A 120VAC NC：7A 240VAC	NO：10A 125VAC 7A 250VAC 7A 30VDC NC：7A 250VAC
Coil voltage	DC	5～24V	3～24V	3～48V	3～48V
	AC	------	------	-------	------
Power consumption	DC	0.45W、0.2W	0.45W、0.2W	0.36W	0.36W、0.45W
	AC	------	------	-------	------
Life expectancy Mechanical (Min.)		1×10^7	1×10^7	1×10^7	1×10^7
Electrical (Min.)		1×10^5、(※)3×10^4	1×10^5	1×10^5	1×10^5
Dielectric strength Open contact		1000VAC	1000VAC	750VAC	750VAC
Contact and coil		2500VAC	2500VAC	1500VAC	1500VAC
Contact circuits		------	------	------	------
Terminal layout mm (inch) Bottom view (PCB layout)					
Terminal type					
Safety approval		UL / TUV / VDE	UL / CSA / TUV / VDE	UL / VDE	UL / TUV
Page no.		18-21	22-26	27-29	30-33

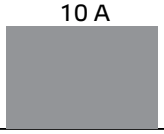
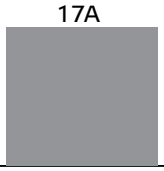
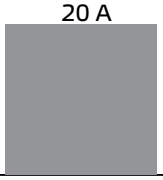
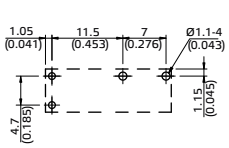
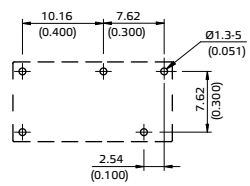
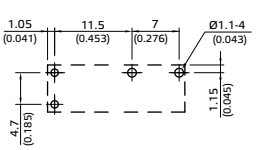
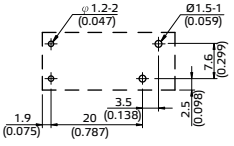
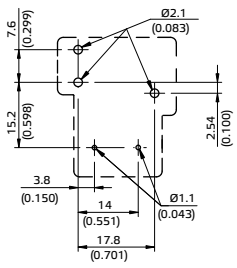
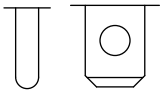
Relay Selection Chart

801H	812H/BH	207	507	507 - 2 pole
				
22.5x16.5x20.3	21x16x16.3	21x16x20.6	29x12.5x15.7	29x12.5x15.7
1A、1B、1C	1A、1B、1C	1A	1A、1C	2A、2C
10A 	12A 	17A 	16A 	12A 
10A 250VAC 10A 30VDC	NO : 10A 240VAC 12A 120VAC NC : 8A 240VAC 10A 120VAC	NO : 17A 240VAC	12A 240VAC (507/N) 10A 240VAC (N1) 16A 240VAC(H/HN)	8A 240VAC
3～60V	3～48V	3~48V	3～110V	3-48V
------	------	------	6～240V	6-240V
0.36W	0.36W	0.4W	0.53W、0.40W、0.25W	0.53W
------	------	------	0.75VA	0.75VA
1×10^7	1×10^7	1×10^7	3×10^7	$3x10^7$
1×10^5	1×10^5	1×10^5	1×10^5	$1x10^5$
750VAC	750VAC	1000VAC	1000VAC	1000VAC
1500VAC	1500VAC	2500VAC	5000VAC	5000VAC
------	------	------	------	2500VAC
				
				
UL CSA TUV	UL CSA TUV VDE	UL VDE	UL VDE	UL VDE
34-37	38-41	42-45	46-55	46-55

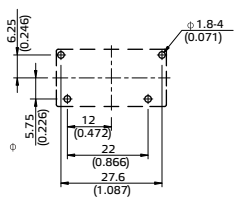
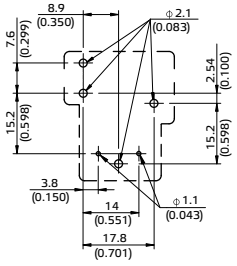
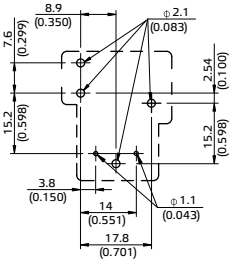
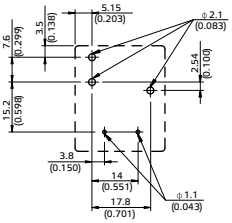
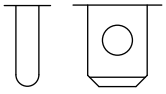
Relay Selection Chart

Type		507HT	881WP	894	793
Photo / Description					
Outline (L×W×H) mm No including terminals		29x12.5x15.7	32.5x12.7x15.7	29x12.5x25.1	29.5x13.5x26
Contact configuration		1A、1C	1A	2A、2B、2C	1A、1B、1C
Max. Allowable Contact current (A)	45 40 35 30 25 20 15 10 5 3	16A	16A	12A	16A
Contact rating Resistive load		10A 240VAC 16A 240VAC	16A 240VAC	894：8A 240VAC 894H：NO/12A NC/ 10A 240VAC	16A 240VAC
Coil voltage	DC	3～48V	5～60V	3～110V	3～100V
	AC	------	------	------	------
Power consumption	DC	0.4W-0.53W	0.4W	0.8W、1.4W、0.53W	0.7W、0.53W
	AC	------	------	------	------
Life expectancy Mechanical (Min.)		3×10^7	1×10^7	3×10^6	1×10^7
Electrical (Min.)		see inside page	1×10^5	3×10^4	1×10^5
Dielectric strength Open contact		1000VAC	1000VAC	2500VAC	1000VAC
Contact and coil		5000VAC	5000VAC	5000VAC	5000VAC
Contact circuits		------	------	2500VAC	------
Terminal layout mm (inch) Bottom view (PCB layout)					
Terminal type					
Safety approval		UL / VDE	UL / VDE	UL / CSA / TUV / VDE	UL / CSA / TUV
Page no.		55-57	58-63	64-70	71-75

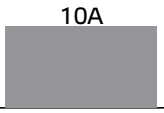
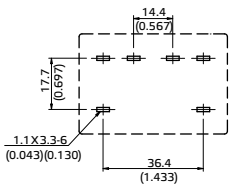
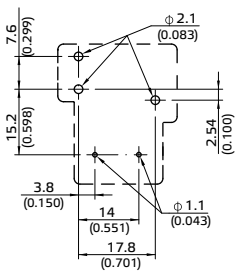
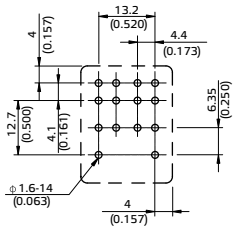
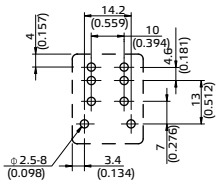
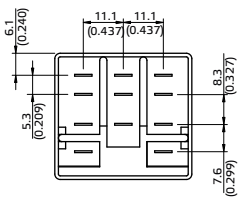
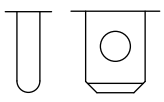
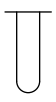
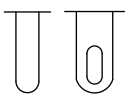
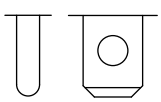
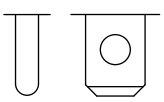
Relay Selection Chart

202	892	202HT	302	805
				
20.5x7x15.3	20x10.3x16	20.5x7x15.3	29x12.6x24.8	32.2x27.5x20.4
1A	1A、1B、1C	1A	1A	1A、1C
				
202：5A 240VAC 202N：3A 240VAC 202H：7A 240VAC	892：NO/NC: 5A/3A 240VAC 892H：NO/NC: 7A/5A 240VAC	10A 240VAC	17A 240VAC	20A 240VAC
5～24V	3～60V	5～24V	3～110V	5～110V
------	------	------	------	------
0.36W、0.2W	0.4W、0.2W	0.36W	0.53W、0.4W	0.7W
------	------	------	------	------
5×10^6	1×10^7	5×10^6	1×10^7	1×10^7
1×10^5	1×10^5	1×10^5	1×10^5	1×10^5
750VAC	1000VAC	750VAC	1000VAC	1000VAC
4000VAC	4000VAC	4000VAC	5000VAC	2500VAC
------	------	------	------	------
				
				
UL / VDE	CSA / UL / TUV / VDE	UL / VDE	UL / TUV	UL /CUL
76-80	81-85	86-89	90-96	97-102

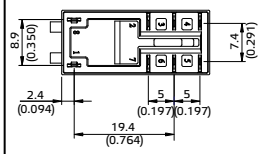
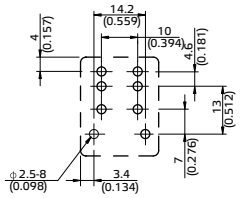
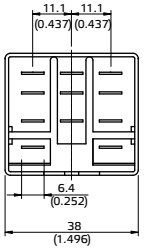
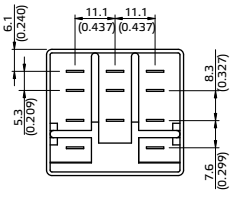
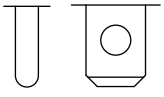
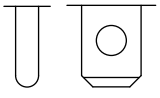
Relay Selection Chart

Type		891	832/832A -OPEN	832/832A -C	832A (W、WP)
Photo / Description					
Outline (L×W×H) mm No including terminals		30x16x23.5	29x24.1x17.3	32.2x27.5x20.4	50x28x28.2
Contact configuration		1A	1A、1B、1C	1A、1B、1C	1A、1B、1C
Max. Allowable Contact current (A)	45 40 35 30 25 20 15 10 5 3	25A	30A	30A	30A
Contact rating Resistive load		25A 250VAC	1A: 30A 240VAC 1B: 15A 240VAC 1C: NO/20A NC/10A 240VAC	1A: 30A 240VAC 1B: 15A 240VAC 1C: NO/20A NC/10A 240VAC	1A：30A 240VAC 1B：15A 240VAC 1C：NO/20ANC/10A 240VAC
Coil voltage	DC	5～48V	5～110V	5～110V	5～110V
	AC	------	------	------	------
Power consumption	DC	0.9W	0.93W	0.93W / 1.1W	0.93W
	AC	------	------	------	------
Life expectancy Mechanical (Min.)		5×10^6	1×10^7	1×10^7	1×10^7
Electrical (Min.)		1×10^5	1×10^5	1×10^5	1×10^5
Dielectric strength Open contact		1000VAC	1500VAC	1500VAC	1500VAC
Contact and coil		4500VAC	2500VAC	2500VAC	2500VAC
Contact circuits		------	------	------	------
Terminal layout mm (inch) Bottom view (PCB layout)					
Terminal type					
Safety approval		CSA TUV UL	UL CSA VDE	UL CSA VDE	UL CSA VDE
Page no.		103-106	107-115	107-115	107-115

Relay Selection Chart

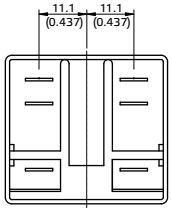
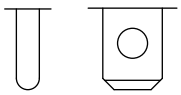
841	832HA	SCLD 、LB	SCL	731
				
51.5x34.9x36.8	32.2x27.5x20.4	27.5x21.5x36	27.5x21.5x35.2	38x35x47.6
1A、2A	1A、1B、1C	2C、4C	2A ~ 2C	1C ~ 3C
				
1A：30A 220VAC 2A：25A 220VAC	NC:40A 240VAC NO:40A 240VAC	5A 250VAC 5A 28VDC	10A 240VAC 10A 28VDC	10A 240VAC 10A 28VDC
3～200V	5～48V	6～120V	6～120V	6～120V
6～240V	------	12～240V	12～240V	12～240V
1.92W	0.93W	0.9W	0.9W	1.2W
1.7VA～2.7VA	------	1.2VA	1.2VA	2.0VA、2.7VA
5×10^6	2×10^6	1×10^7	1×10^7	1×10^7
1×10^5	NO:3×10^4, NC:1×10^4	1×10^5	1×10^5	1×10^5
2000VAC	1500VAC	500VAC	1000VAC	500VAC
4000VAC	2500VAC	1500VAC	1500VAC	1500VAC
2000VAC	------	1500VAC	1500VAC	1500VAC
				
				
UL | TUV	UL	UL | CSA | TUV | FI/CE	UL | CSA | TUV | FI/CE	UL | CSA | FI/CE
116-124	125-128	129-136	137-142	143-150

Relay Selection Chart

Type		607	SCLA	735	731 (H)
Photo / Description					
Outline (L×W×H) mm No including terminals		28.7x12.5x34.5	27.5x21.5x35.2	38x34.8x47.5	38x35x47.6
Contact configuration		2C	1A 、 1B 、 1C	1C ~ 3C	1C ~ 3C
Max. Allowable Contact current (A)	45 40 35 30 25 20 15 10 5 3	10A	15A	20A	25A
Contact rating Resistive load		10A 250VAC 10A 30VDC	15A 240VAC 15A 28VDC	1,2 form C 20A 240VAC 3 form C 20A 120VAC	1C, 2C: 20A 300VAC 25A 277VAC 3C: 16A 300VAC 20A 277VAC
Coil voltage	DC	5 ～125V	6～120V	6～125V	6～120V
	AC	12 ～240V	12～240V	6～240V	12～240V
Power consumption	DC	0.53W	0.9W	1.2W、1.5W	1.2W
	AC	0.9VA	1.2VA	3.0VA、3.4VA	2.0VA、2.7VA
Life expectancy Mechanical (Min.)		2×10^7(DC) 、1×10^7(AC)	1×10^7	1×10^7	1×10^7
Electrical (Min.)		1×10^5	1×10^5	1×10^5	5×10^4
Dielectric strength Open contact		1000VAC	1000VAC	1000VAC	1000VAC
Contact and coil		5000VAC	1500VAC	1600VAC	2500VAC
Contact circuits		3000VAC	1500VAC	1600VAC	2500VAC
Terminal layout mm (inch) Bottom view (PCB layout)					
Terminal type					
Safety approval		UL	UL CSA TUV CE	UL CSA FI/CE	UL
Page no.		151-154	155-160	161-163	143-150

Relay Selection Chart

737

38x34.8x47.5
DM-DB
30A 
30A 300VAC 15A 600VAC 30A 28VDC 1.5HP 200~600VAC
6～125V
6～240V
1.2W、1.5W
3.0VA
1×10^{7}
1×10^{5}
1000VAC
2200VAC
1600VAC


UL / CSA / TUV
164-169

Standard packaging

Relay series	Dimensions[(LxWxH) cm]	PCS / Tube, Tray	PCS / Box	G.W. kg / Box
307	51.6x15.0x12.6	25 / Tube	1000	6.2
835	34.6x34.2x21.2	50 / Tray	1000	7.6
834	48.5x35.0x23.5	100 / Tray	2000	15.3
833H,899	37.2x25.0x13.0	20 / Tube	1000	10
801H	43.2x34.4x16.8	100 / Tray	1000	18.6
812H/BH	46.4x22.3x16.3	25 / Tube	1000	11
507	65.4x19.4x18.3	20 / Tube	1000	15.6
881WP	51.8x32.8x20.4	25 / Tube	500	10.8
894	64.8x19.8x12.3	20 / Tube	500	11.5
793	63.2x20.2x12.5	20 / Tube	500	11.5
202	47.6x16.1x17.0	20 / Tube	1000	5.8
892	34.4x23.3x17.7	25 / Tube	1000	8.5
302	45.5x29.0x19.5	25 / Tray	500	14
891	34.0x20.0x20.0	40 / Tray	400	11
832,805 (open)	38.0x24.0x18.5	25 / Tray	250	9
805	41.2x38.7x26.9	50 / Tray	500	16
832	58.8x19x16	20 / Tube	500	16
832AWP,805WP (with shroud)	50.4x26.0x41.5	25 / Tray	500	18
832AW,805W	44.4x32.5x37.0	25 / Tray	500	19
841	53.5x36.5x21.8	20 / Tray	200	20
841 (C1)	70.7x35.8x23.8	20 / Tray	200	20
SCL series	53.0x33.0x29.0	25 / Tray	500	21.1
731,735,737	53.5x35.8x24.0	20 / Tray	200	20
607	30.1x17.6x27.2	10 / Tray	400	8
STN607	42.2x28.8x13.8	20 / Tray	200	8.6

Cross Reference Sheet

Song Chuan	NAIS	TYCO	OMRON	F & T	American Zettler	IDEC
307, 835	----------	----------	----------	----------	AZ765	----------
835(NL,L)	----------	OJ/OJE	----------	T77	----------	----------
833H	JSM	SRUDH MCL/PCO T7C	G5X	FTR-P1 FBR50	AZ942 AZ943	----------
812H	JS	ORWH T7N	G5L	CS FBR160/150	AZ941	----------
801H	----------	TF/ZF,T70 SRUT	LC1M	FBR111	AZ4	RCN
207	----------	LNH,LN3	----------	----------	----------	----------
507 793	JR1a	RP/RT, OZ	G2R-1E	VSB FBR611	AZ725/755	RG
507 Inrush		RKA/RKS				
507	LE	RT1RP3SL	G5G	----------	----------	----------
881WP	----------	RT	G2RL	----------	AZ743	----------
401	----------	V23077	----------	----------	----------	----------
894	ALA2PF ----------	OSA ----------	G5PA-2 ----------	FTR-F4 RT*	---------- ----------	---------- ----------
202	LD	PCJ	G5N	F3	AZ937	----------
892	JQ	PCH	G5Q	----------	----------	----------
302	LE	OMIF	G5G	----------	----------	----------
891	LF/JM	PCF	G4A	VH	AZ760	----------
805	----------	----------	----------	T90A		----------
832	JT	ORU	G8P	TD/ZD, T90	AZ2110	----------
832AWP	JTN	T9A	G & P	----------	----------	----------
841	HE	T92 *	G7L	----------	----------	----------
SCLB/LD	HC2 HC4	ZG/ZT SRE KHA/HK	MY2 MY4	MAT2 MAT4 FRL264	AZ1309	RM2 RY4
SCL	----------	SRET	----------	FRL260	AZ162/163	----------
731/735 737	HP32 HP33	RM, OF* KUH/KUP	MJ	FRL253 FRL254	AZ1200 AZ1279	RR2B
607	----------	----------	G2R(S)	----------	----------	RJ
STN607	----------	----------	P2RF-08E	----------	----------	SJ
SCLA	HL2	TM,K10	LY2	MAT2	AZ161	RH2

Contact Material & Applications

Contact Material	Attached by		Typical Properties	Typical Applications	Range of Application
	Sulfur	Oxidation			
Fine Gold Au	No	No	Best corrosion resistance, too soft as pure metal. Cold welding danger	Gold plating > 3μm Gold flashing > 0.2μm for contact protection	N/A
Hard Gold AuNi 1	No	No	Excellent corrosion resistance, stable contact resistance for low loads	Dry circuits used in sulphuric atmosphere	μV~60V μA~0.2A
Silver-Fine Grain AgNi. 15	Yes	No	Mechanical stability, low tendency for welding, harder than pure Ag, but slightly higher contact resistance	Universal applications for medium size loads higher loads than pure Ag	> 12V 10mA~10A
Silver-Nickel AgNi 10	Yes	No	Resists wear, slightly susceptible to welding. High contact resistance	Loads in the medium range power applications, DC loads	> 12V > 100 mA
Silver Cad Oxide AgCdO	Yes	No	Less susceptible to welding than AgNi, high wear resistivity. Minor environmental concerns recently	Particularly suited for inductive loads	> 12V > 100 mA
Silver Tin Oxide AgSnO	Yes	No	Lowest welding tendency.Very high wear resistance. Little material transfer	Circuits with medium to heavy loads,DC switching	> 12V > 100 mA
Silver Tin Indium AgSnOInO	Yes	No	Same as above but more resistance to in-rush, less welding, stable material	Same as above plus higher in-rush app.	> 12V > 100 mA

While there are several other possible contact materials, these are the most commonly used in electromechanical relays. These materials represent the range from 200mA to 50A, 100mV to 600V applications.

For specific applications, contact Song Chuan for assistance in choosing a relay or contact material.

Technical Information

INTRODUCTION

The technical Information is divided into four basic parts:
(1) General application guidelines.
(2) Guidelines for relay handling.
(3) Guidelines for selecting contact protection circuits.
(4) Guidelines for selecting a temperature tolerant relay for your application.

In addition to the technical information, all data sheets in this catalog also include notes relevant to each specific relay. Please refer to these relay-specific notes, as they contain information vital to optimum relay performance.

GENERAL APPLICATION

1. Avoid Abuse
As with any electro-mechanical device, relays are sensitive to abuse. To assure optimum performance, avoid dropping, hitting, or other unnecessary shocks to the relay.

2. Never Remove the Case
The case of a relay is an integral part of that relay. SONG CHUAN relays are not designed to have the case detached. Never remove the case, as specifications or performance cannot be guaranteed.

3. Atmosphere Considerations
SONG CHUAN recommends that you use unsealed relays in an atmosphere with only a minimum of dust and other contaminants. If a relay must withstand a harsh atmosphere, SONG CHUAN recommends that you utilize a sealed relay.

4. Warning-Silicon Based Resins
Some silicon based resins can cause contact failure in a relay. The silicon based resin does not need to come in direct contact to cause damage it just needs to be in close proximity. In cases where silicon based resins are used, it is recommended that a sealed relay be used.

5. Voltage
To assure meeting to electrical and performance characte ristics, only the correct rated voltage should be applied to the coil, i.e., voltage sine waves only for AC coils, rectangular for DC coils.

6. Over Voltage
Although typically a spike will not effect a relay's performance, the voltage on the coil should not continuously exceed the maximum allowable voltage.

7. Contact Current
Currents that exceed the designated values should be avoided.

8. Check Your Load and Conditions
The specifications provided in this catalog are "typical" specifications and are given only as guidelines. The performance of contacts vary depending on both the type of load and operating conditions encountered. Please consider your specific load and operating conditions in selecting the optimum relay for your application.

9. Warning-Ambient Temperature
The ambient temperature ranges, listed in the general specifications for each relay, must be adhered to, to assure proper operation. Note: Both the storage and operating range differs for the sensitive and standard version of the same model. Refer to the data sheet of the relay for specific information.

10. Ultrasonic Cleaning
Never use any type of ultrasonic cleaning. Ultrasonic cleaning is always traumatic and is not recommended.

11. Pickup & Dropout Voltages
Both pickup and dropout voltages should be considered when selecting a relay coil voltage.Forspeciflc information, contact us.

12. Power Relays
On power relays, avoid the use of single diode coil suppression. Use a zener and diode or a capacitor and resistor instead, for longer contact life. Also, avoid storing relays in excessively humid conditions where possible, as moisture can effect performance in some cases.

RELAY HANDLING

SONG CHUAN utilizes extensive quality control measures, and takes extreme care in packaging to assure that the relays you receive are in the best possible operating condition. Once they enter your facility, some common sense care can prevent damage during handling. Some areas to closely monitor and supervise Include:

1. Handling

Avoid handling relay terminals.
Oils and contaminates common to the human hand can cause contamination of the surface finish—which in turn can lead to solder ability problems.

Technical Information

Always store relays at recommended temperatures.
Observe maximum storage temperatures listed in the general specifications section of the data sheet for your specific relay.

Avoid misalignment of the terminal layout and PC board hole pattern.
Even If there Is just a slight misalignment, forcing a relay into the board can cause relay damage compromising such import ant fa ctorsasseal integrity, relay performance, and relay reliability.

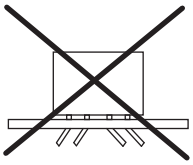
Store handle relays in a clean environment.
Your relays are state-of-the-art, electromechanical components, and should be stored and handled as such. Even environmentally sealed relays have exposed contacts that are subject to contamination, and therefore are minimally sensitive to their storage and production environment.

2. Mounting

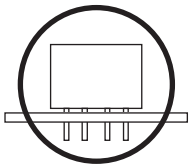
Suggested PC board layout.
Refer to the PC board layout located on the data sheet for your specific relay.

For automatic insertion.
SONG CHUAN relays are available packaged for a variety of automatic Insertion machines. Please consult with our Technical Services Department.

Never bend terminals.
Once relay terminals are bent, performance can no longer be guaranteed. Never bend terminals to make them self-clinching, and avoid bending them to fit misaligned holes.

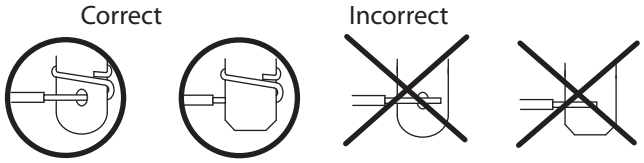


Incorrect
Bending the relay leads, for any reason, can cause failure.



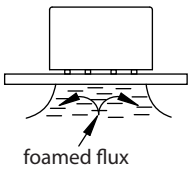
Correct
Relay terminals remain straight and penetrate completely through the PC board.

Connection and mounting.
To connect a lead wire to the terminal or to mount the relay on a PC board, securely wind the lead wire around the terminal as shown.



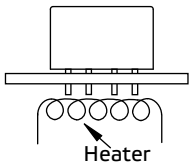
3. Soldering and washing guidelines

Flux coating



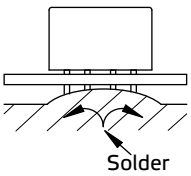
- Adjust the position of the PC board so that flux does not overflow onto the top of it.
- Use rosin-based flux, which is non-corrosive and requires no washing.
- Do not use Automatic Flux Coating Method to dust-cover type relays.
- Do not overflow onto the top of PC board, in such a case, the flux may even penetrate a flux-resistant type relay.

Preheating



- Be sure to preheat before soldering.
- Preheating acts to improve solder ability.
- Preheat according to the following conditions:
  Temperature~100ºC/212T or less time Within-approx. 1 minute

Soldering

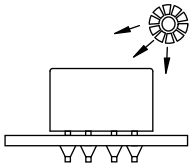


Automatic Soldering
- Flow solder is the optimum method for soldering.
- Adjust the level of solder so that It does not overflow onto the top of the PC board.
- Unless otherwise specified, solder under the following conditions depending on the type of relay.
- Solder Temperature—approx. 250ºC/482T for SnPb soldering, 260ºC/500T for Lead-free soldering.
- Soldering Time—within approx. 5 seconds
- Solder Ratio— Sn/Pb = 60/40 or 63/37.

Hand Soldering
- Keep the tip of the soldering Iron clean.
- Solder Iron—30W to 60W.
- Iron Tip Temperature-approx. 300ºC/572ºF
- Solder Time—within approx. 3 seconds

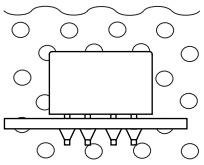
Technical Information

Cooling



- Immediate air cooling is recommended to prevent deterioration of the relay and surrounding parts due to soldering heat.
- Although the sealed type relay can be cleaned, avoid immersing the relay into cold liquid (such as washing solvent) immediately after soldering. Doing so may deteriorate the sealing performance.

Washing

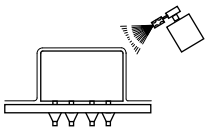


- Do not wash flux-resistant type relays and dust cover type relays by immersion.
- Careless washing may cause washing solvent to penetrate the relay.
- Plastic sealed type relays can be washed by immersion. Use washing solvents shown in Table 1.
- Use of other washing solvents may damage the relay case and cover, and also cause washing solvent to penetrate the relay.
- Washing with the boiling methods is recommended. Avoid ultrasonic washing on relays. Use of ultra¬sonic cleaning may cause breaks in the coil or slight sticking of contacts due to the ultrasonic energy.

Table 1: Washing solvent compatibility for sealed type relays

	Flourinated	Aqueous	Chlorinated	Alcoholic
Solvent trade name	Freon TF	Aqua flux	Perclean B-5	IFA
	Freon TE	#WL1000	Perclean D	Ethanol
	Freon TES	Indusco 624	CholorotheneVG	
	Freon TMC	InduscolOOO	Cholorothene N	
	Alpha 1001	Lonco terge 530	Cholorosolve	
	Alpha 1003	Hollis 310	Alpha 564	
		Lonco Terg	Trichcloroethan	

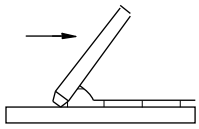
Coating



- If the PC board is to be coated to prevent the insulation of the PC board from deteriorating due to corrosive gases and high temperature, note the following.
- Do not coat dust-cover type relays and flux-resistant type relays.
- Depending on the type, some coating materials may have an adverse affect on relays, select coating materials carefully.

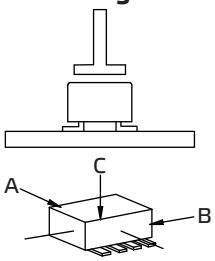
4. Surface Mounting

Cream solder printing



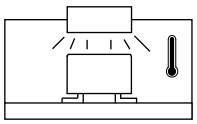
- Please use the cream solder that contains a flux without a large of chlorine, to avoid the terminal being corroded.

Mounting



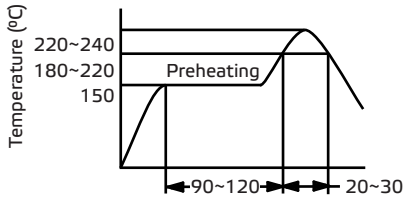
- The holding pressure on relay must be equal or less than the following reference. Or we canot guarantee the relay performance.
  Direction A: 1.96N max.
  Direction B: 4.9N max.
  Direction C: 1.96N max.

Reflow soldering

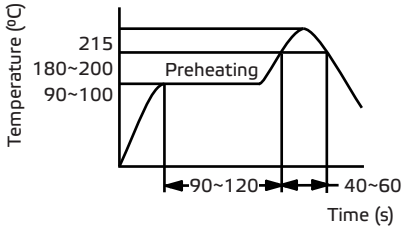


- Recommended conditions of soldering for example, as following. (The temperature profile shows the temperature on the PC board side.)
- Don't make the relay in a cold washing solvent instantly after soldering, to avoid the seal ability of relay being damaged.

(1) IRS method

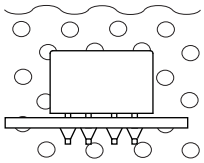


(2) VPS method



Technical Information

Washing



- Washing by boiling method and immersion is recommended.
- Use of ultra-sonic cleaning may cause break in the coil or slight sticking of contacts.
- Recommended washing solvent are aqueous solvent & alcoholic solvent. Furthermore, the solvent temperature must be within 40ºC.

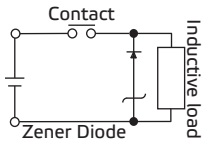
Washing solvent

	Chlorinated	Aqueous	Alcoholic
Solvent	Perochlene	Indusco	IPA
	Chlorosolder	Holys	Ethanol

Contact Protection Circuit

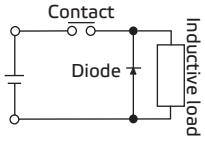
A contact protection circuit, designed to prolong the life expectancy of the relay is recommended. This protection will have the additional advantage of suppressing noise, as well as preventing the generation of carbon at the contact surface when the relay contact is opened. However, unless designed correctly, the protection circuit may produce adverse effects, such as prolonging the release time of the relay. The following table lists examples of contact protection circuits:

Diode and Zener Diode Circuit



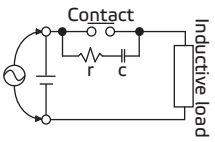
- DC applications only.
- Utilize when diode circuit causes too long release time.
- Use zener diode with zener voltage about equal to power supply voltage.

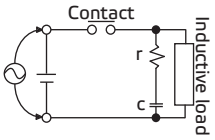
Diode Circuit



- DC applications only.
- Compared to RC type, circuit delays release time (2 to 5%X).
- For larger voltages, use diode with reverse breakdown 10 times circuit voltage and forward load circuit.
- For smaller voltages, use reverse breakdown v or 2 to 3 X power supply voltage.

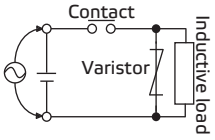
RC Circuits





- This circuit is suitable for AC or DC Contact applications, but if used with AC voltage, Impedance of the load should be smaller than the RC circuit's. Do not utilize for timer loads, as leakage current can cause faulty operation.
- This circuit is suitable for AC or DC. If Circuit the load is a relay or solenoid, release times lengthen. Effective when connected to both contacts, power supply voltage across the load is 100 to 200V.

Varistor Circuit



- Effective for AC & DC applications.
- Circuit slightly delays release time. Effective when connected to both contacts, power supply voltage across the load is 100 to 200V

Inrush Current

The type of load combined with it's inrush current characteristics, together with switching frequency can cause contact welding. For loads with inrush current, measure the steady state current to determine the proper relay. Typical types of loads, the inrush current they create, included in the following chart:

Type of load	Inrush current
Resisitve	steady state current.
Solenoid	10~20 times the steady state current.
Motor	5~10 times the steady state current.
Incandescent lamp	10~15 times the steady state current.
Mercury lamp	3 times the steady state current.
Sodium vapor lamp	1~3 times the steady state current.
Capacitive	20~40 times the steady state current.
Transformer	5~10 times the steady state current.

Temperature Tolerant Relay

More and more applications require relays that operate at higher temperatures. Relays run "hot" due to high ambient temperatures and/or high contact switching. These "hotter" environments can destroy a relay's insulation system and lead to product failure in the field.

Technical Information

To help prevent this type of failure, SONG CHUAN has, for several years, offered UL Class A, Class B, Class F insulating systems on its miniature power relays. Class F relays have significant "heat" advantage over Class A or Class B relays that, by contrast, only offer a rating of 105ºC (Class A) or 130 ºC (Class B). This Class F insulating system is designated by UL and it is rated at a full 155ºC. This section is a discussion of why and when an engineer needs to select a high temperature rated for the application.

First, let's define an insulation system, as it pertains to this application note. An insulation system may be defined as simply any combination of insulating materials used in electrical equipment. In a relay it is the combination of a coil form, the magnet wire coating, and the outer wrapping of the relay coil.

A proper insulating system is essential because it separates the control side of a relay (the coil) from the switch side of the relay (the contacts). The switch side of the relay may be used to switch high voltages that are potentially lethal to humans as well as to the circuitry that is connected to the coil side of the relay.

Consequently, when a relay is evaluated for a particular project, It should be evaluated at the maximum ambient temperature it will see In that product. If the Insulating system breaks down, it allows electrical current to flow from the switch side of the relay to the control side of the relay. This in turn causes failure-and in some cases can present a safety hazard.

UL understands that time and temperature are the enemies of an insulating system. Just as paint on a house begins to peel with age and exposure to heat, an insulation system begins to break down with age and exposure to heat. Consequently, UL designed and administers a series of tests that assure that this breakdown does not occur even after aging and heating.

UL Document 1446 is concerned with systems of insulating materials. Insulating systems are classified by their ability to withstand elevated temperatures. It is from this document that we derive Class A, Class B, and Class F.

Max Hot-Spot Temperatur Insulating System

System Class	ºC	ºF
B	130	266
F	155	311
H	180	356
N	200	392
R	220	428
S	240	464

The Table is printed directly from the UL document. As it indicates, a Class B relay is rated for a maximum hot spot temperature of 130ºC, and Class F relay is rated for a maximum hot spot temperature of 155ºC. For a relay, the hot spot temperature is basically the coil temperature. The coil temperature is a result of the self-heating of the coil due to the power dissipation of the coil (coll voltage and current), heating due to the load being carried by the contacts (they get hot too and that leaks over to the coll), and by the ambient temperature of the environment.

At room temperature, most relay colls will not exceed a temperature of 130ºC even with full contact load and continuous operation. However, if a particular circuit design calls for the relay to work in a high ambient temperature, or at a coil voltage higher than nominal (or both)-it is possible that the coil temperature might exceed 130ºC. Sometimes the designer does not realize this until the product gets to UL~and at that point it is determined that a higher class of insulating system is required. If the Class B (rated up to 130ºC) is not sufficient, Class F (rated up to 155ºC) would be the next logical choice. Class F relays are proving to be ideal for applications such as:

- Appliance Controls
- Automotive Controls
- Spas and Pool Controls
- Industrial Controls

Plus, as power relays are used more and more in control application, and boards get smaller and smaller allowing less room for heat dissipation-Class B and Class F relays become increasingly attractive.

307

Features

- Miniature 12A 125VAC, 10A 250VAC/30VDC PCB Relay.
- UL/CUL, CSA, TUV, VDE approved.
- 450mW and 200mW coil are available.
- Optional for high CTI 250 plastic material (E version) and VDE approved type.
- Comply with RoHS-Directive 2011/65/EU.

Type List

◆ Standard type

Terminal style	Contact form	Insulation system	Designation (provided with)	
			Flux tight	Sealed type washable
PCB terminal	1A (SPNO)	---------	307-1AH-C	307-1AH-S
		F	307-1AH-F-C	307-1AH-F-S

◆ High power type

PCB terminal	1A (SPNO)	---------	307H-1AC-C	307H-1AC-S
		F	307H-1AC-F-C	307H-1AC-F-S

Ordering Information

307	H	N	-	1A	H	F	S	E	XXVDC
1	2	3		4	5	6	7	8	9

1. 307 -- Basic series designation
2. Blank -- Standard type
   H -- High power type
3. Blank -- Standard Type
   N -- High sensitive type
4. 1A -- Single pole normally open
5. C -- Contact Material AgNi
   H -- Contact Material AgSnO
6. Blank -- Standard type
   F -- Class F
7. C -- Flux tight
   S -- Sealed type washable
8. Blank -- Standard type
   E -- CTI 250V
9. XXVDC -- Coil voltage (please refer to the coil rating data for the availability)

Contact Rating

Type	307	307 H
Resistive load	5A 240VAC	8A 240VAC 10A 240VAC (※) 12A 125VAC (※)

Note: 307H special version of 10A 240VAC 100K ops. can be selected.

Coil Rating (DC)

◆ Standard Type

Rated voltage (V)	Rated current ±10 % at 23ºC (mA)	Coil resistance ±10 % at 23ºC (Ω)	Max. continuous voltage at 70ºC (307) at 85ºC (307H)	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
5	90.9	55	130 % of rated voltage	75 % of rated voltage	5 % of rated voltage	approx. 0.45W
6	75	80				
9	50	180				
12	37.5	320				
18	25	720				
24	18.8	1280				

307

◆ High sensitive type

Rated voltage (V)	Rated current ±10 % at 23ºC (mA)	Coil resistance ±10 % at 23ºC (Ω)	Max.continuous voltage at 70ºC (307) at 85ºC (307H)	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
5	40.0	125	130 % of rated voltage	80 % of rated voltage	5 % of rated voltage	approx. 0.2W
6	33.3	180				
9	22.2	405				
12	16.7	720				
18	11.1	1620				
24	8.3	2880				

Specification

Contact material	AgNi / AgSnO alloy		
Contact resistance (1)	100mΩ Max.		
Operate time (1)	100ms Max.		
Release time (1)	5ms Max.		
Insulation resistance (1)	100MΩ Min. (DC 500V)		
Dielectric strength (1)	Between open contact : AC 1000V, 50/60Hz 1 min.		
	Between contact and coil : AC 2500V, 50/60Hz 1 min.		
Vibration resistance	Operating extremes	10~50Hz , amplitude 1.0 mm	
	Damage limits	10~50Hz , amplitude 1.0 mm	
Shock resistance	Operating extremes	10G	
	Damage limits	100G	
Life expectancy	Mechanical	10,000,000 operations (frequency 18,000 operations/hr)	
	Electrical	100,000 operations (※) 30,000 operations (frequency 360 operations/hr)	
Operating ambient temperature	307	-30~+70ºC (no freezing)	
	307H	-40~+85ºC (no freezing) (2)	
Weight	Approx. 6 g		

Note : (1) initial value.
(2) special version of high temperature 105ºC can be selected.

Safety Approval

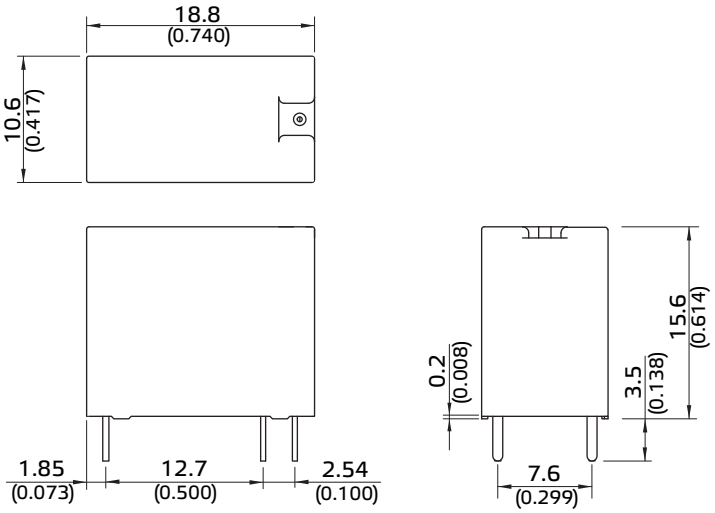
Certified	307, 307H	307	307H
	UL/CUL	TUV	VDE
File No.	E88991	R50128391	40028236

Safety Approval Rating

UL/CUL		307	307H
307	307H	TUV	VDE
5A 277VAC 5A 30VDC 1/4HP 125/250VAC	10A 277VAC 10A 30VDC 12A 125VAC 1/4HP 125/250VAC TV-3 (for AgSnO contact)	5A 250VAC 5A 30VDC	10A 250VAC T85 6A 240VAC T105

Note : If there is cleaning process and sealed type is selected, the vent-hole should be removed after the process.

Outline Dimensions



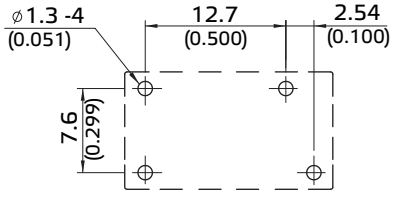
Wiring Diagram

BOTTOM VIEW

1A

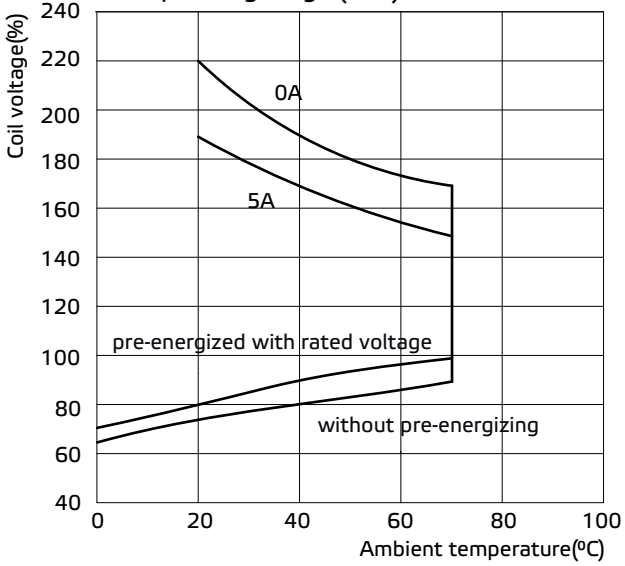
PC Board Layout

BOTTOM VIEW

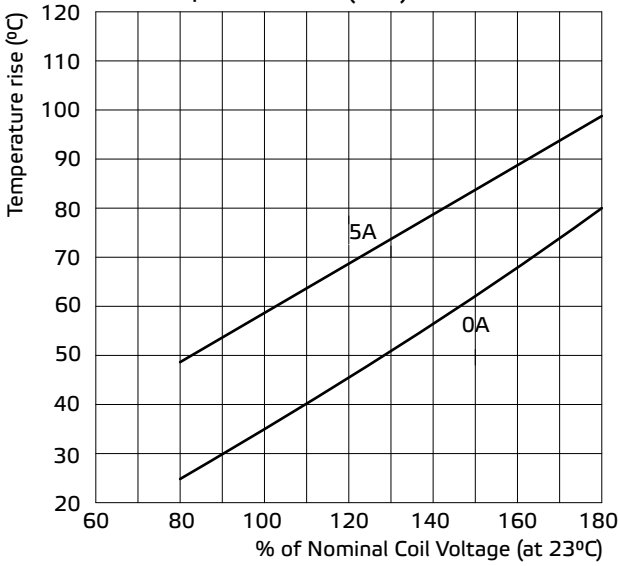


Engineering Data

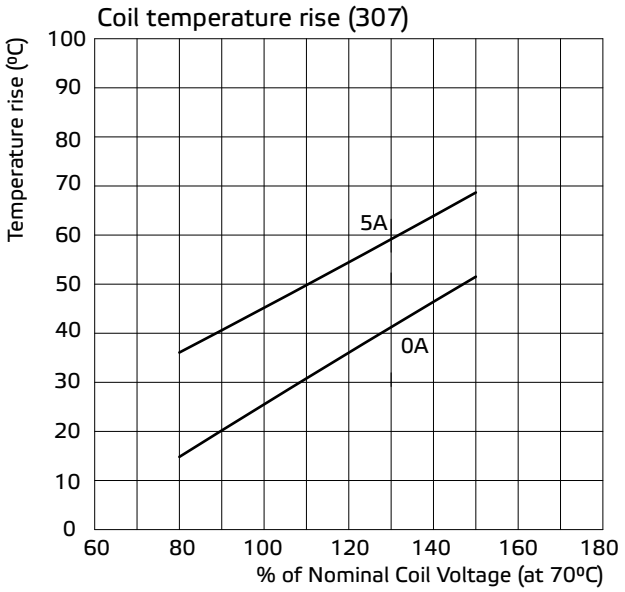
Coil operating range (307)



Coil temperature rise (307)



Coil temperature rise (307)



835

Features

- Miniature 12A 125VAC, 10A 250VAC/30VDC PCB Relay.
- UL/CUL, CSA, TUV, VDE approved.
- 450mW and 200mW coil are available.
- Optional for high CTI 250 plastic material (E version) and VDE approved type.
- Comply with RoHS-Directive 2011/65/EU.

Type List

◆ 835

Terminal style	Contact form	Insulation system	Designation (provided with)	
			Flux tight	Sealed type washable
PCB terminal	1A (SPNO)	---------	835-1A-C	835-1A-S
		F	835-1A-F-C	835-1A-F-S

◆ 835L

PCB terminal	1A (SPNO)	---------	835L-1A-C	835L-1A-S
		F	835L-1A-F-C	835L-1A-F-S

◆ 835NL

PCB terminal	1A (SPNO)	---------	835NL-1A-C	835NL-1A-S
		F	835NL-1A-F-C	835NL-1A-F-S

Ordering Information

835	N	L	-	1A	-	F	-	C	E	XXVDC
1	2	3		4		5		6	7	8

1. 835 -- Basic series designation

2. Blank -- Standard type
   N -- High sensitive type

3. Blank -- Standard type
   L -- Low power type

4. 1A -- Single pole normally open

5. Blank -- Standard type
   F -- Class F

6. C -- Flux tight
   S -- Sealed type washable

7. Blank -- Standard type
   E -- CTI 250V

8. XXVDC -- Coil voltage (please refer to the coil rating data for the availability).

Contact Rating

Type	835	835L	835NL
Resistive load	10A 240VAC 12A 120VAC (※)	8A 240VAC	5A 240VAC 8A 240VAC (※)

835

Coil Rating (DC)

◆ 835 / 835L

Rated voltage (V)	Rated current ±10 % at 23ºC (mA)	Coil resistance ±10 % at 23ºC (Ω)	Max.continuous voltage at 85ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
3	150	20	160 % of rated voltage	75 % of rated voltage	5 % of rated voltage	approx. 0.45W
5	90.9	55				
6	75	80				
9	50	180				
12	37.5	320				
18	25	720				
24	18.8	1280				

◆ 835NL

Rated voltage (V)	Rated current ±10 % at 23ºC (mA)	Coil resistance ±10 % at 23ºC (Ω)	Max.continuous voltage at 85ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
3	66.7	45	160 % of rated voltage	80 % of rated voltage	5 % of rated voltage	approx. 0.2W
5	40.0	125				
6	33.3	180				
9	22.2	405				
12	16.7	720				
18	11.1	1620				
24	8.3	2880				

Specification

Contact material	AgSnO / AgNi alloy	
Contact resistance (1)	100mΩ Max.	
Operate time (1)	10ms Max.	
Release time (1)	5ms Max. (for 835)	
	7ms Max. (for 835L/NL)	
Insulation resistance (1)	100MΩ Min. (DC 500V)	
Dielectric strength (1)	Between open contact : AC 1000V , 50/60Hz 1 min. (for 835)	
	: AC 750V , 50/60Hz 1 min. (for 835L/NL)	
	Between contact and coil : AC 2500V , 50/60Hz 1 min.	
Vibration resistance	Operating extremes 10~50Hz , amplitude 1.0 mm	
	Damage limits 10~50Hz , amplitude 1.0 mm	
Shock resistance	Operating extremes	10G
	Damage limits	100G
Life expectancy	Mechanical	10,000,000 operations (frequency 18,000 operations/hr)
	Electrical	100,000 operations(※)30,000 ops. (for 835/835NL) (frequency 900 operations/hr)
Operating ambient temperature		-40 ~ +85ºC (no freezing)
Weight		Approx. 6 g

Note: (1) initial value

Safety Approval

Certified	UL/CUL	CSA	TUV	VDE
File No.	E74321	1474283	R9552647	40010643

Safety Approval Rating

◆ 835

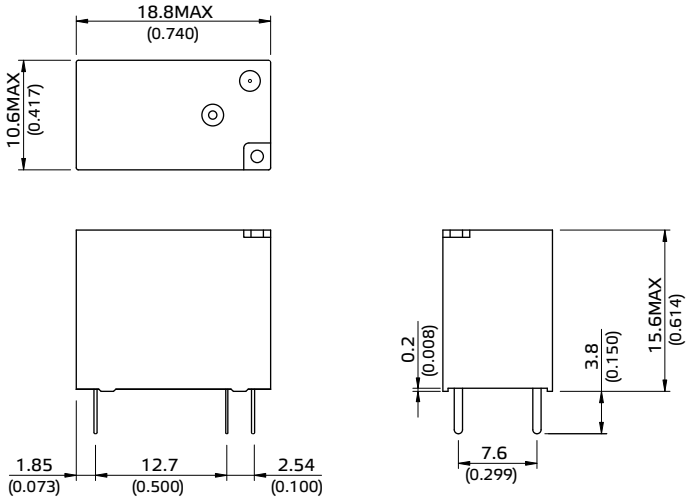
UL/CUL	CSA	TUV	VDE
12A 125VAC 10A 277VAC/30VDC TV-5	12A 125VAC 10A 277VAC/30VDC	12A 125VAC 10A 277VAC/30VDC	10A 250VAC T85 4A 400VAC T85

◆ 835L/835NL

UL / CUL	VDE
8A 277VAC 10A 125VAC 8A 30VDC	8A 250VAC T85 4A 400VAC T85

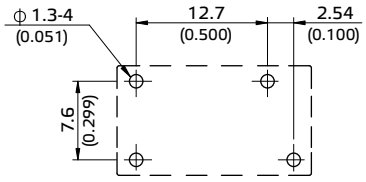
835

Outline Dimensions



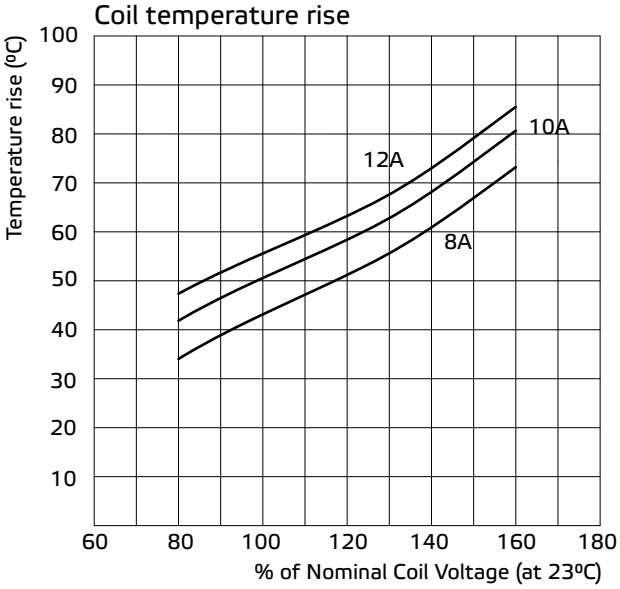
Wiring Diagram
BOTTOM VIEW

PC Board Layout
BOTTOM VIEW

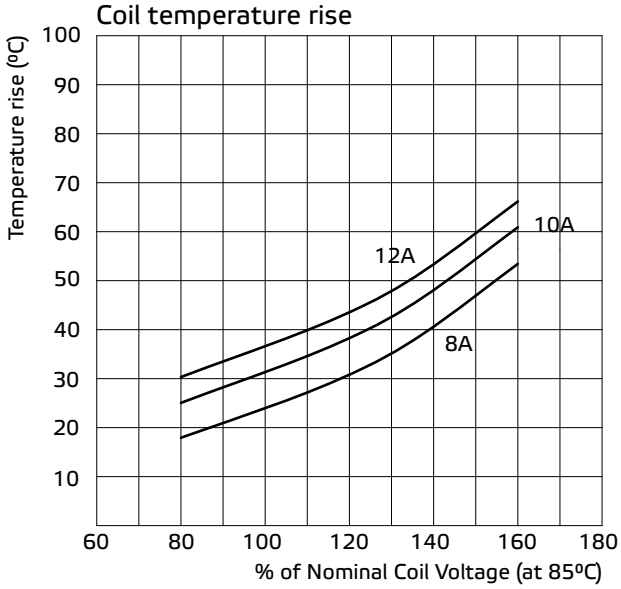


Engineering Data

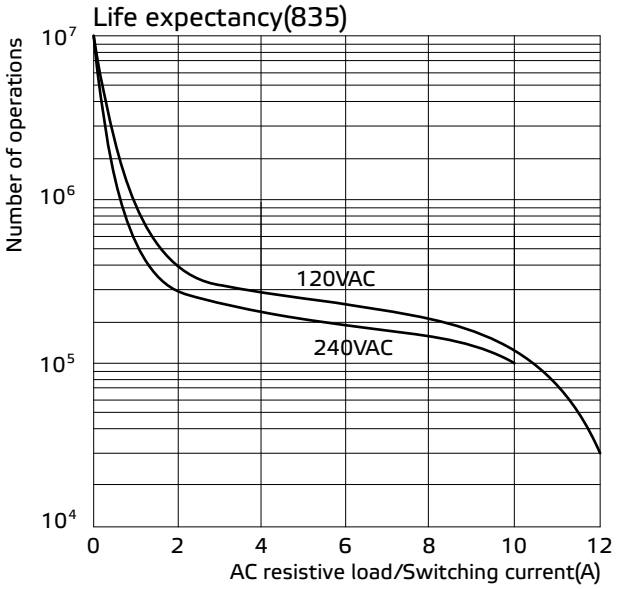
Coil temperature rise



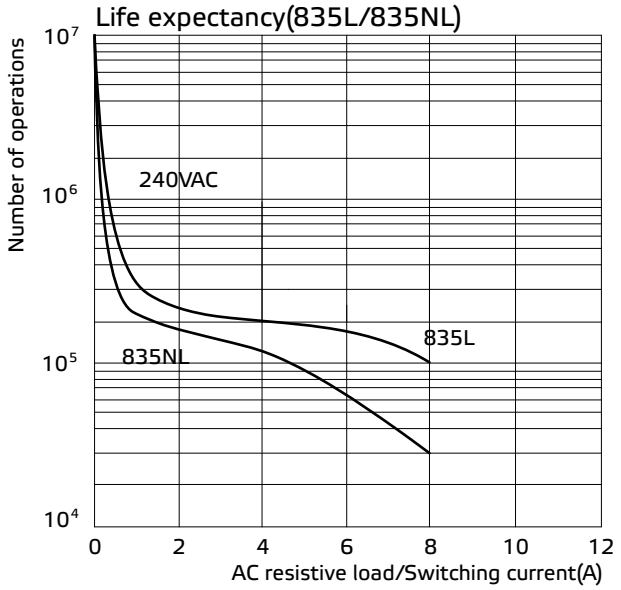
Coil temperature rise



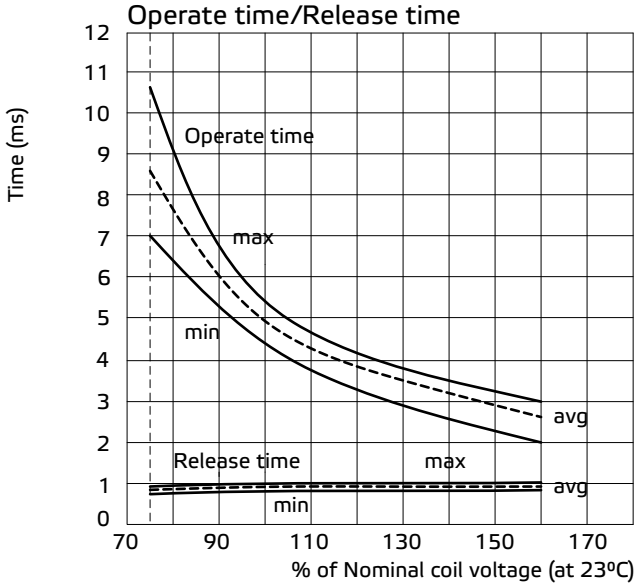
Life expectancy(835)



Life expectancy(835L/835NL)



Operate time/Release time



899

Features

- Baby Sugar Cube Relay.
- 10A 277VAC ; 15A 125VAC ; UL/CUL, VDE Approvals.
- High Insulation up to 2000V (899B type).
- High CTI material greater than 250.
- Comply with RoHS-Directive 2011/65/EU.

Type List

Terminal style	Contact form	UL Insulation system approval	Designation (provided with)	
			Flux tight	Sealed type washable
PCB terminal	1A (SPNO)	---------	899-1A-C	899-1A-S
		F	899-1A-F-C	899-1A-F-S
	1B (SPNC)	---------	899-1B-C	899-1B-S
		F	899-1B-F-C	899-1B-F-S
	1C (SPDT)	---------	899-1C-C	899-1C-S
		F	899-1C-F-C	899-1C-F-S
	1A (SPNO)	F	899B-1A-F-C	899B-1A-F-S
	1B (SPNC)	F	899B-1B-F-C	899B-1B-F-S
	1C (SPDT)	F	899B-1C-F-C	899B-1C-F-S

Ordering Information

899	-	1A	-	F	-	C	E	XXVDC
1		2		3		4	5	6

1. 899 -- Basic series designation
   899B -- Basic series designation with insulation barrier

2. 1A -- Single pole normally open
   1B -- Single pole normally closed
   1C -- Single pole double throw

3. Blank -- Standard type
   F -- Class F

4. C -- Flux tight
   S -- Sealed type washable

5. Blank -- Standard type
   E -- CTI 250V

6. XXVDC -- Coil voltage (please refer to the coil rating data for the availability)

Contact Rating

Resistive load	NO : 7A 240VAC , 10A 120VAC ; NC : 7A 240VAC

Coil Rating (DC)

Rated voltage (V)	Rated current 10 % at 23ºC (mA)	Coil resistance 10 % at 23ºC (Ω)	Max. continuous voltage at 70ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
3	120	25	150 % of rated voltage	75 % of rated voltage	10 % of rated voltage	approx. 0.36W
5	72	70				
6	60	100				
9	40	225				
12	30	400				
15	24	625				
18	20	900				
24	15	1600				
36	10	3600				
48	7.5	6400				

Specification

Contact material	AgNi alloy (2)	
Contact resistance (1)	100mΩ Max.	
Operate time (1)	10ms Max.	
Release time (1)	5ms Max.	
Insulation resistance (1)	100MΩ Min. (DC 500V)	
Dielectric strength (1)	Between open contact	: AC 750V , 50/60Hz 1 min. : AC 1000V , 50/60Hz 1 min. (for 899B type)
	Between contact and coil	: AC 1500V , 50/60Hz 1 min. : AC 2000V , 50/60Hz 1 min. (for 899B type)
Vibration resistance	Operating extremes	10~50Hz , amplitude 1.5 mm
	Damage limits	10~50Hz , amplitude 1.5 mm
Shock resistance	Operating extremes	10G
	Damage limits	100G
Life expectancy	Mechanical	10,000,000 operations (frequency 18,000 operations/hr)
	Electrical	100,000 operations (frequency 360 operations/hr)
Operating ambient temperature	-40 ~ +70ºC (no freezing)(3)	
	Approx. 10 g	

Note: (1) initial value
(2) AgSnO alloy contact material is available.
(3) -40~+85ºC is available.

899

Safety Approval

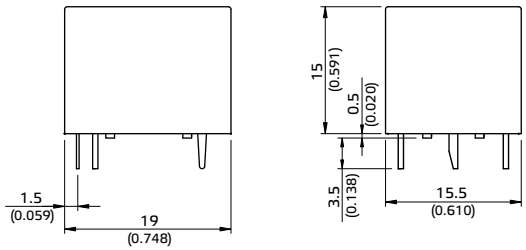
Certified	UL / CUL	VDE
File No.	E88991	40012174

Safety Approval Rating

UL / CUL	VDE	
	NO	NC
※ 15A 125VAC 10A 277VAC 1/3HP 125/250VAC (NO) 1/4HP 125/250VAC (NC)	10A 250VAC T85 6A 250VAC T105	6A 250VAC T85

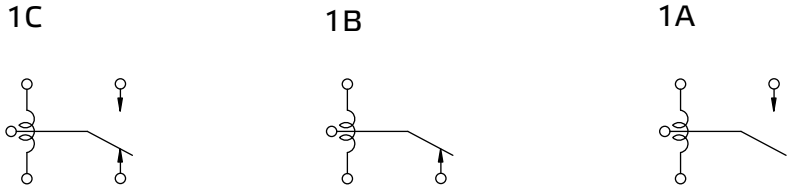
Notes: 1. More details can be provide on request
2. ※ -- Class F only

Outline Dimensions



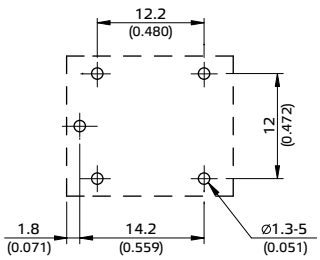
Wiring Diagram

BOTTOM VIEW



PC Board Layout

BOTTOM VIEW



833H

Features

- Miniature PCB baby sugar cube relay.
- General purpose application.
- 10A 277VAC, 15A 125VAC ratings.
- SPNO, SPNC, SPDT and sealed flux free & sealed type washable are available.
- Comply with RoHS-Directive 2011/65/EU.

Type List

Terminal style	Contact form	UL Insulation system approval	Designation (provided with)	
			Flux tight	Sealed type washable
PCB terminal	1A (SPNO)	---------	833H-1A-C	833H-1A-S
		F	833H-1A-F-C	833H-1A-F-S
	1C (SPDT)	---------	833H-1C-C	833H-1C-S
		F	833H-1C-F-C	833H-1C-F-S

Ordering Information

833H - 1A - F - C XXVDC
1 2 3 4 5

1. 833H -- Basic series designation
2. 1A -- Single pole normally open
   1B -- Single pole normally closed
   1C -- Single pole double throw
3. Blank -- Standard type
   F -- Class F
4. C -- Flux tight
   S -- Sealed type washable
5. XXVDC -- Coil voltage (please refer to the coil rating data for the availability)

Contact Rating

Resistive load	NO:10A 125VAC, 7A 250VAC, 7A 30VDC ; NC:7A 250VAC

Coil Rating (DC)

Rated voltage (V)	Rated current ±10 % at 23ºC (mA)	Coil resistance ±10 % at 23ºC (Ω)	Max.continuous voltage at 70ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
3	120	25	150 % of rated voltage	75 % of rated voltage	10 % of rated voltage	approx. 0.36W
4	91	44				
5	72	70				
6	60	100				
9	40	225				
12	30	400				
24	15	1600				
36	10	3600				
48	9.4	5120				approx. 0.45W

833H

Specification

Contact material	AgSnO alloy	
Contact resistance (1)	100mΩ Max.	
Operate time (1)	10ms Max.	
Release time (1)	5ms Max.	
Insulation resistance (1)	100MΩ Min. (DC 500V)	
Dielectric strength (1)	Between open contact : AC 750V , 50/60Hz 1 min.	
	Between contact and coil : AC 1500V, 50/60Hz 1 min.	
Vibration resistance	Operating extremes	10~50Hz , amplitude 1.5 mm
	Damage limits	10~50Hz , amplitude 1.5 mm
Shock resistance	Operating extremes	10G
	Damage limits	100G
Life expectancy	Mechanical	10,000,000 operations (frequency 18,000 operations/hr)
	Electrical	100,000 operation (frequency 1,200 operations/hr)
Operating ambient temperature	-40 ~ +70ºC (no freezing) (2)	
Weight	Approx. 10 g	

Note: (1) initial value
(2) -40 ~ +85ºC is available.

Safety Approval

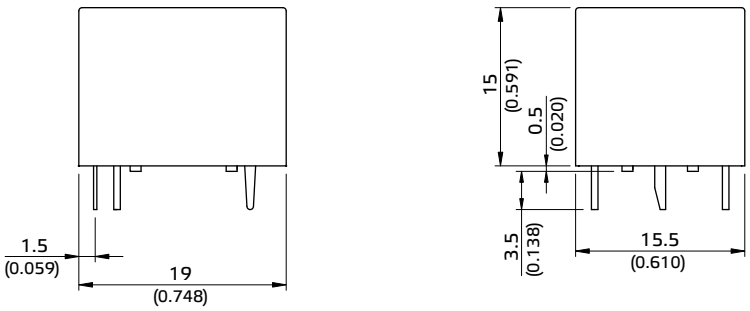
Certified	UL / CUL	TUV
File No.	E88991	R3-09754206

Safety Approval Rating

UL / CUL	TUV
15A 125VAC 10A 277VAC 7A 30VDC 1/4HP 125/250VAC 1/3HP 125/250VAC	12A 125VAC 7A 250VAC 7A 30VDC 4A 250VAC cosϕ0.3

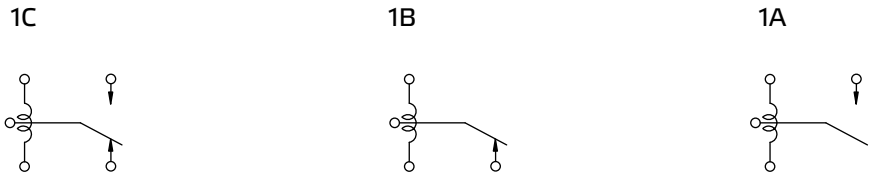
833H

Outline Dimensions



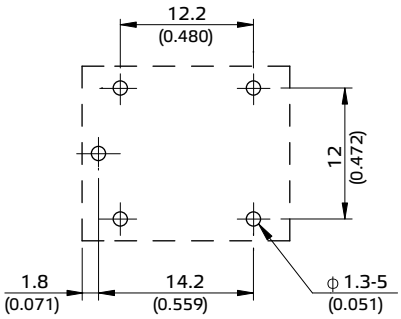
Wiring Diagram

BOTTOM VIEW



PC Board Layout

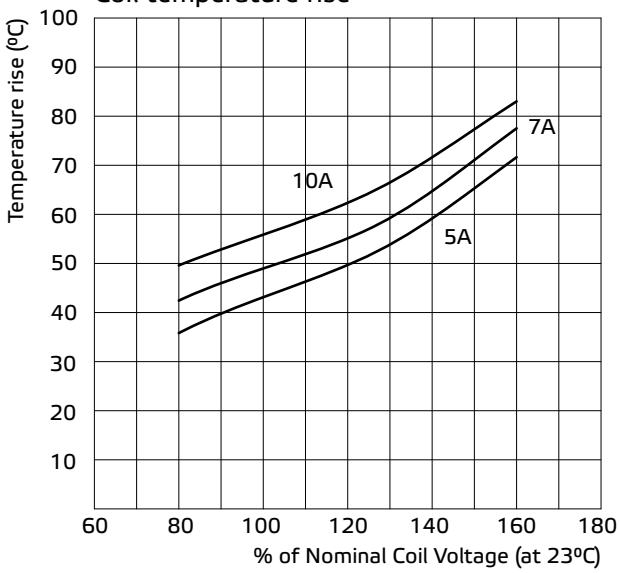
BOTTOM VIEW



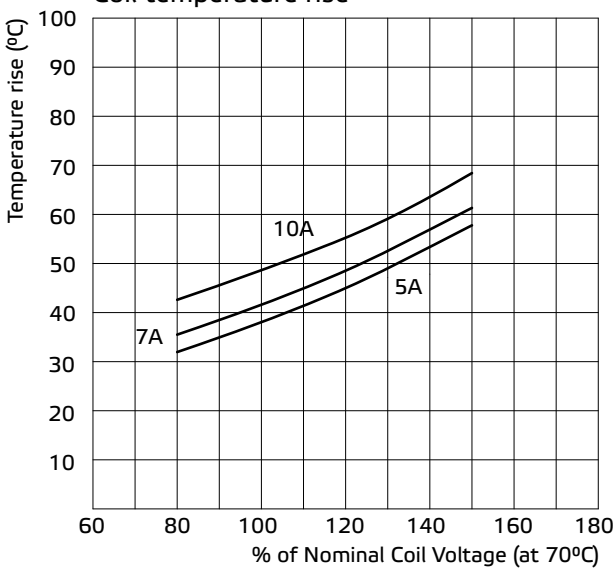
833H

Engineering Data

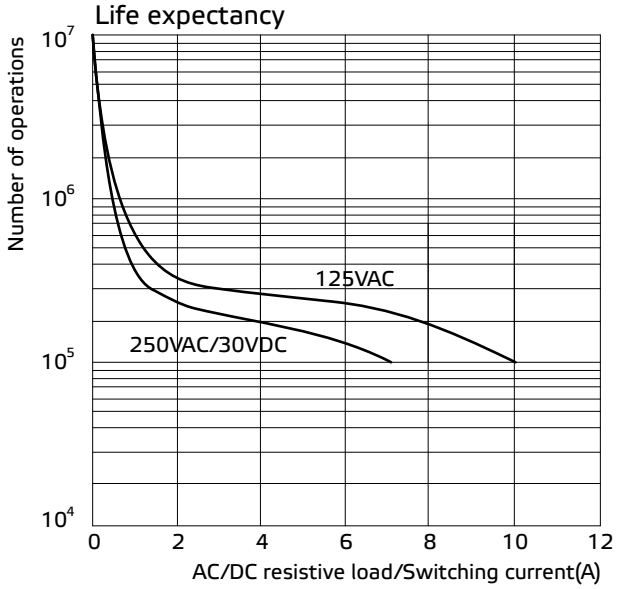
Coil temperature rise



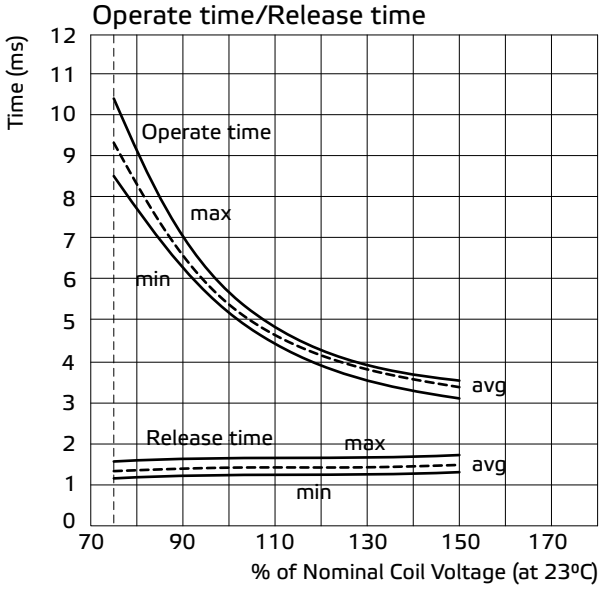
Coil temperature rise



Life expectancy



Operate time/Release time



801H

Features

- Miniature PCB surge cube relay.
- High rating 10A/250VAC/30VDC & TV-8.
- Reverse contact terminal position version is available.
- Optional for sealed flux free & sealed washable types.
- Comply with RoHS-Directive 2011/65/EU.

Type List

Terminal style	Contact form	UL Insulation system approval	Designation (provided with)	
			Flux tight	Sealed type washable
PCB terminal	1C (SPDT)	---------	801H-1C-C	801H-1C-S
		F	801H-1C-C FXXVDC	801H-1C-S FXXVDC
	1A (SPNO)	---------	801H-1A-C	801H-1A-S
		F	801H-1A-C FXXVDC	801H-1A-S FXXVDC

Ordering Information

801	H	-	1A	-	C	F	XXVDC
1	2		3		4	5	6

1. 801 -- Basic series designation
2. H -- High power type
3. 1A -- Single pole normally open
   1B -- Single pole normally closed
   1C -- Single pole double throw
4. C -- Flux tight
   S -- Sealed type washable
5. Blank -- Standard type
   F -- Class F
6. XXVDC -- Coil voltage (please refer to the coil rating data for the availability)

Contact Rating

Resistive load	12A 125VAC (※) ; 10A 250VAC ; 10A 30VDC

Coil Rating (DC)

Rated voltage (V)	Rated current ±10 % at 23ºC (mA)	Coil resistance ±10 % at 23ºC (Ω)	Max.continuous voltage at 85ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
3	120	25	160 % of rated voltage	75 % of rated voltage	10 % of rated voltage	approx. 0.36W
5	73	69				
6	60	100				
9	40	225				
12	30	400				
18	20	900				
24	15	1600				
48	7.5	6400				
60	6	10000				

801H

Specification

Contact material	AgSnO alloy	
Contact resistance (1)	50mΩ Max.	
Operate time (1)	15ms Max.	
Release time (1)	5ms Max.	
Insulation resistance (1)	100 MΩ Min. (DC 500V)	
Dielectric strength (1)	Between open contact : AC 750V , 50/60Hz 1 min.	
	Between contact and coil : AC 1500V , 50/60Hz 1 min.	
Vibration resistance	Operating extremes	10~50Hz , amplitude 1.0 mm
	Damage limits	10~50Hz , amplitude 1.0 mm
Shock resistance	Operating extremes	10G
	Damage limits	100G
Life expectancy	Mechanical	10,000,000 operations (frequency 18,000 operations/hr)
	Electrical	100,000 operations(※)50,000 operations) (frequency 1,200 operations/hr)
Operating ambient temperature	-40 ~ +85ºC (no freezing)	
Weight	Approx. 16 g	

Note : (1) initial value

Safety Approval

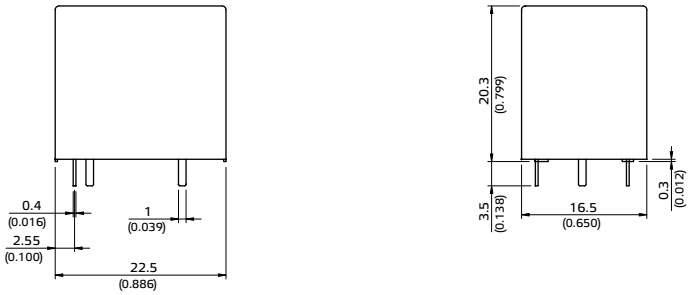
Certified	UL / CUL	CSA	TUV
File No.	E88991	1474287	R09352399

Safety Approval Rating

UL / CUL	CSA	TUV
15A 125VAC 10A 250VAC 10A 30VDC 1/2HP 125/250VAC TV-3 TV-8 (for 1A)	15A 125VAC 10A 250VAC 10A 30VDC 1/2HP 125/250VAC TV-3 TV-8 (for 1A)	10A 250VAC 12A 125VAC 10A 30VDC

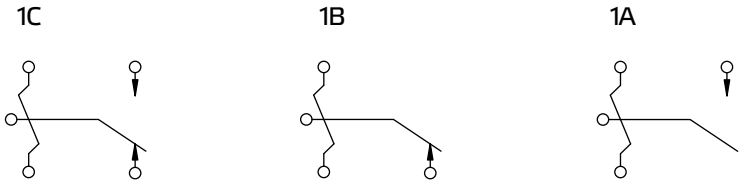
801H

Outline Dimensions



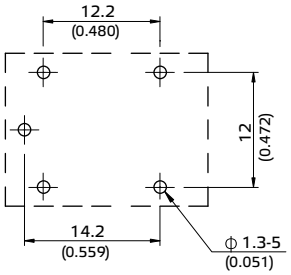
Wiring Diagram

BOTTOM VIEW



PC Board Layout

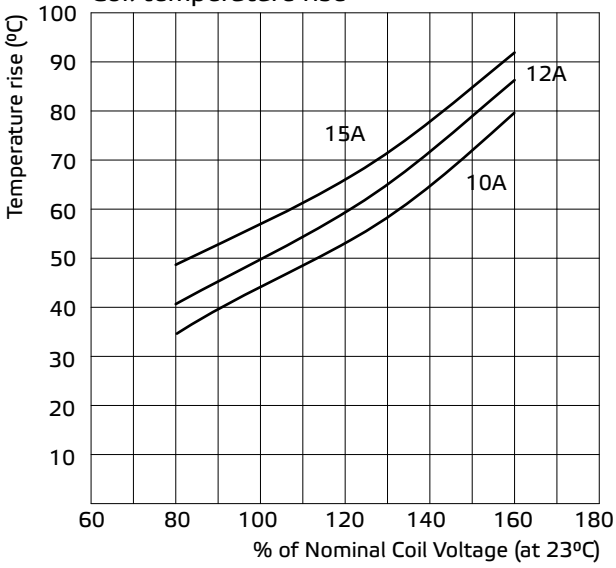
BOTTOM VIEW



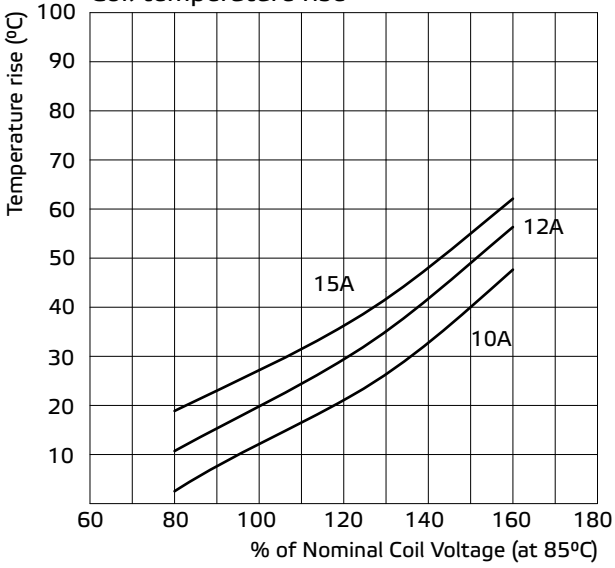
801H

Engineering Data

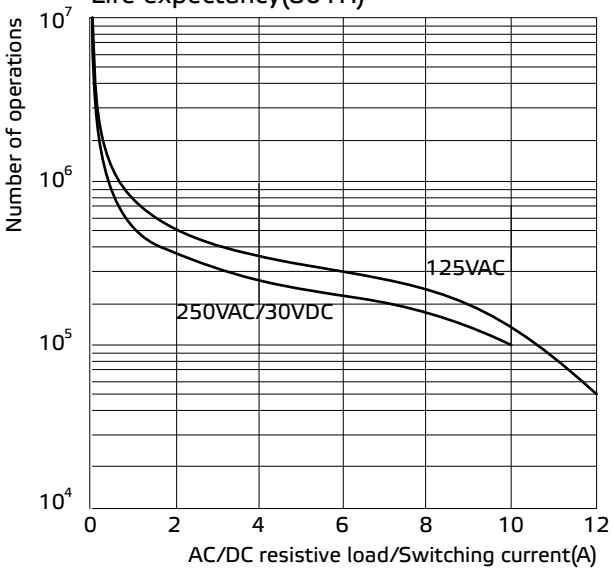
Coil temperature rise



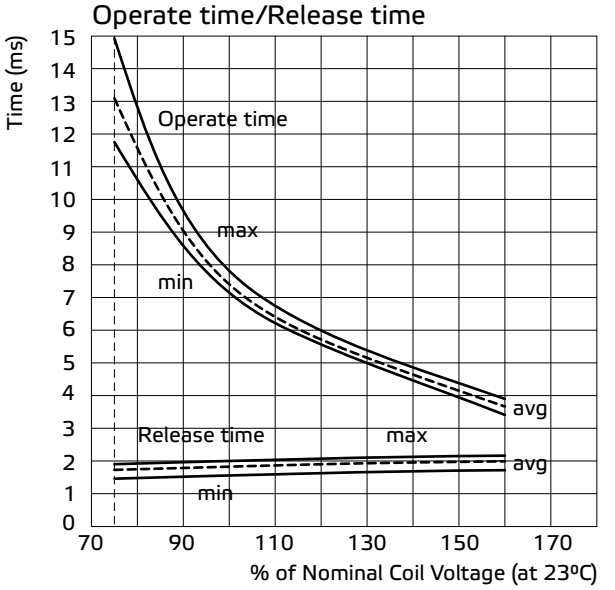
Coil temperature rise



Life expectancy(801H)



Operate time/Release time



812H, 812BH

Features

- Miniature PCB Power Relays 10A 250VAC.
- High CTI250 and New Glow Wire Approved material.
- UL Insulation Class F.
- VDE 0435, UL/CUL, TUV, CSA approved.
- Comply with RoHS-Directive 2011/65/EU.

Type List

◆ 812H

Terminal style	Contact form	UL Insulation system approval	Designation (provided with)	
			Flux tight	Sealed type washable
PCB terminal	1C (SPDT)	---	812H-1C-C	812H-1C-S
		F	812H-1C-C FXXVDC	812H-1C-S FXXVDC
	1A (SPNO)	---	812H-1A-C	812H-1A-S
		F	812H-1A-C FXXVDC	812H-1A-S FXXVDC
	1B (SPNC)	---	812H-1B-C	812H-1B-S
		F	812H-1B-C FXXVDC	812H-1B-S FXXVDC

◆ 812BH

Terminal style	Contact form	UL Insulation system approval	Designation (provided with)	
			Flux tight	Sealed type washable
PCB terminal	1C (SPDT)	---	812BH-1C-C	812BH-1C-C
		F	812BH-1C-C FXXVDC	812BH-1C-C FXXVDC
	1A (SPNO)	---	812BH-1A-C	812BH-1A-C
		F	812BH-1A-C FXXVDC	812BH-1A-C FXXVDC

Ordering Information

812	BH	-	1A	-	C	E	F	XXVDC
1	2		3		4	5	6	7

1. 812 -- Basic series designation

2. BH -- High power type with insulation barrier
   H -- High power type

3. 1A -- Single pole normally open
   1B -- Single pole normally Closed
   1C -- Single pole double throw

4. C -- Flux tight
   S -- Sealed type washable

5. Blank -- Standard type
   E -- CTI 250V

6. Blank -- Standard type
   F -- Class F

7. XXVDC -- Coil voltage (please refer to the coil rating data for the availability).

Contact Rating

Resistive load	NO: 10A/240VAC 12A/120VAC NC: 8A/240VAC 10A/120VAC

812H, 812BH

Coil Rating (DC)

Rated voltage (V)	Rated current ±10 % at 23ºC (mA)	Coil resistance ±10 % at 23ºC (Ω)	Max. continuous voltage at 85ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
3	120	25	160 % of rated voltage	75 % of rated voltage	10 % of rated voltage	approx. 0.36W
5	73	69				
6	60	100				
9	40	225				
12	30	400				
18	20	900				
24	15	1600				
48	7.5	6400				

Specification

Contact material	AgSnO alloy		
Contact resistance (1)	100mΩ Max.		
Operate time (1)	15ms Max.		
Release time (1)	5ms Max.		
Insulation resistance (1)	100 MΩ Min. (DC 500V)		
Dielectric strength (1)	Between open contact	: AC 750V , 50/60Hz 1 min.	(for 812H)
		: AC 1000V, 50/60Hz 1 min.	(for 812BH)
	Between contact and coil	: AC 1500V , 50/60Hz 1 min.	(for 812H)
		: AC 2000V, 50/60Hz 1 min.	(for 812BH)
Vibration resistance	Operating extremes	10~50Hz , amplitude 1.0 mm	
	Damage limits	10~50Hz , amplitude 1.0 mm	
Shock resistance	Operating extremes	10G	
	Damage limits	100G	
Life expectancy	Mechanical	10,000,000 operations (frequency 18,000 operations/hr)	
	Electrical	100,000 operations (frequency 900 operations/hr)	
Operating ambeint temperature	-40 ~ +85ºC (no freezing)		
Weight	Approx. 9 g		

Note : (1) initial value

Safety Approval

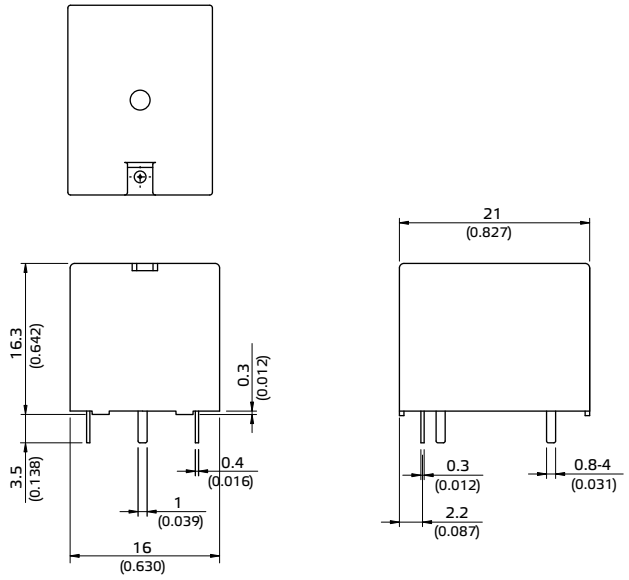
Certified	UL / CUL	CSA	VDE	TUV
File No.	E88991	1129068	122905	R50041911

812H, 812BH

Safety Approval Rating

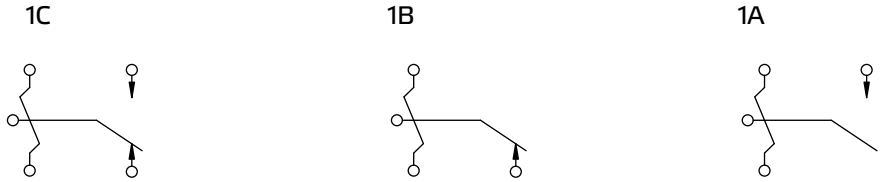
UL / CUL, CSA		VDE	TUV
NO	NC		
20A 125VAC 16A 277VAC 1/2 HP 125VAC 1HP 250VAC 10A 30VDC TV 8	20A 125VAC 12A 277VAC 1/2 HP 125VAC 1HP 250VAC 7A 30VDC	12A 250VAC T85 10A 250VAC T105	7A 250VAC 10A 125VAC 7A 30VDC

Outline Dimensions



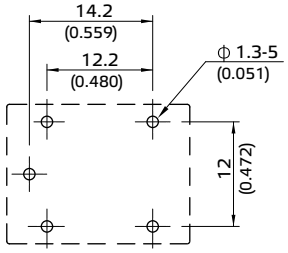
Wiring Diagram

BOTTOM VIEW



PC Board Layout

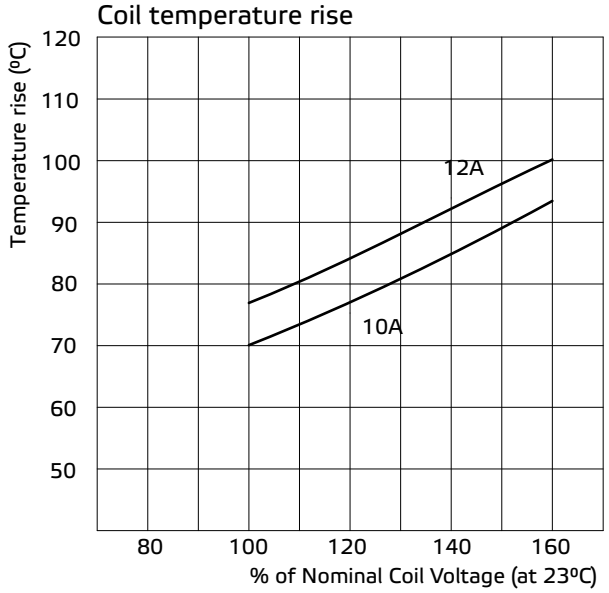
BOTTOM VIEW



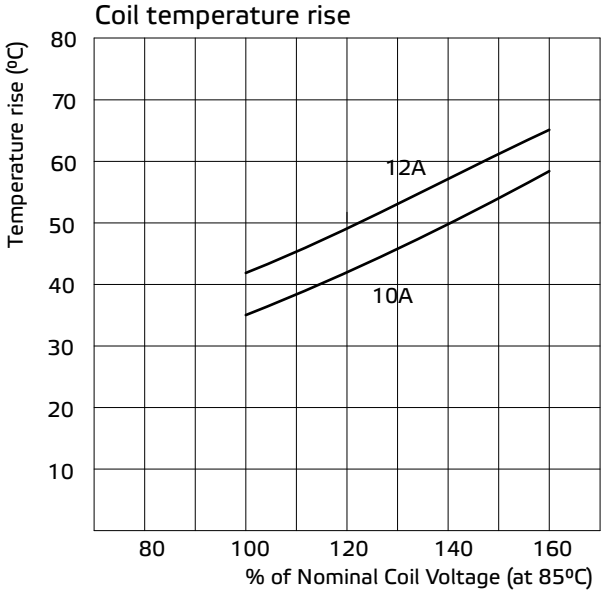
812H, 812BH

Engineering Data

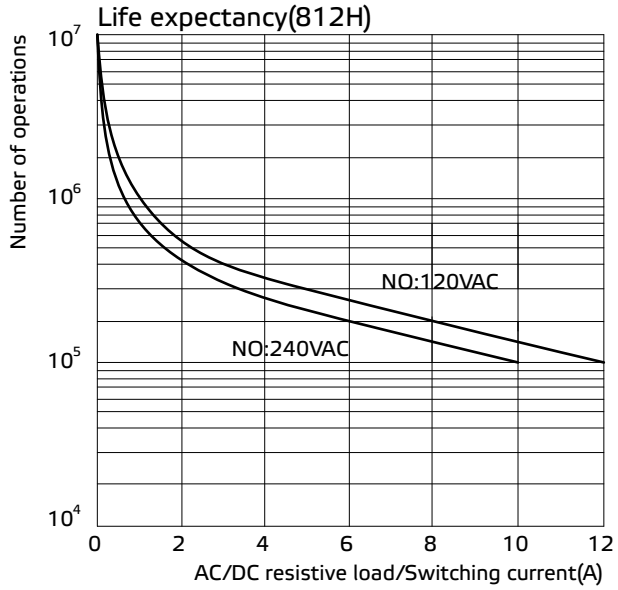
Coil temperature rise



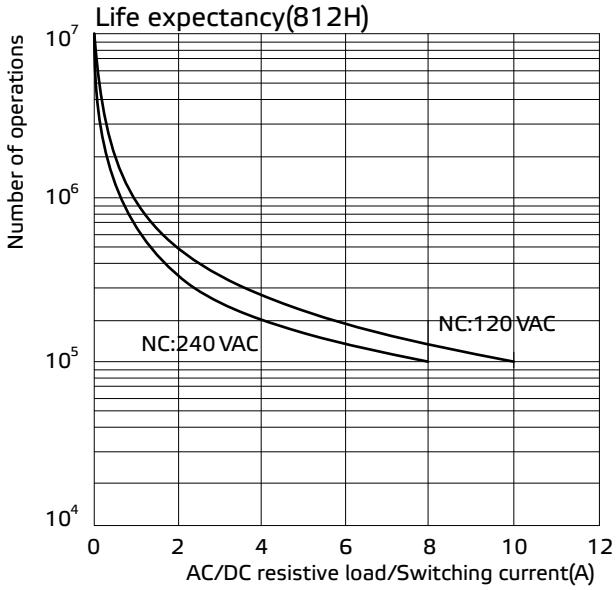
Coil temperature rise



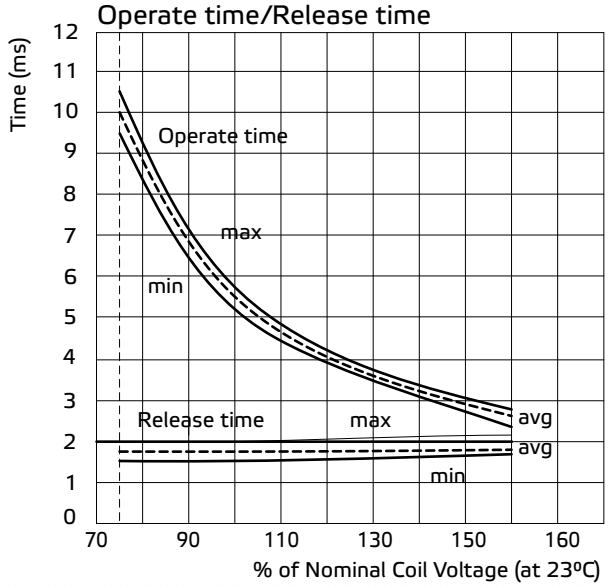
Life expectancy(812H)



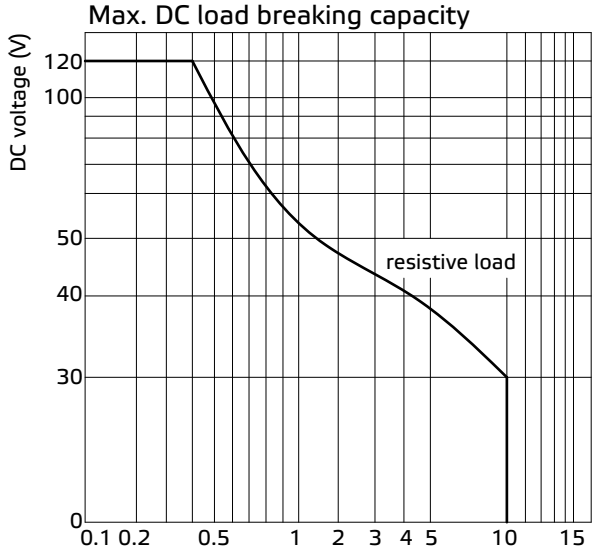
Life expectancy(812H)



Operate time/Release time



Max. DC load breaking capacity



207

Features

- Heavy duty sugar cube relay with 20A 120VAC, 16A 240VAC, TV-8 rating.
- UL & VDE safety approval.
- Optional for flux free and sealed washable cover, SPNO, SPNC, SPDT contact configuration.
- High performance PCB power relay for motor control, compressor control, home appliances.
- High CTI 250 material & new Glow Wire test approved (E-Version).
- Comply with RoHS-Directive 2011/65/EU.

Type List

◆ Standard type

Terminal style	Contact form	Insulation system	Designation (provided with)	
			Flux tight	Sealed type washable
PCB terminal	1A (SPNO)	---------	207-1AH-C	207-1AH-S
		F	207-1AH-F-C	207-1AH-F-S

◆ High power type

PCB terminal	1A (SPNO)	---------	207H-1AC-C	207H-1AC-S
		F	207H-1AC-F-C	207H-1AC-F-S

Ordering Information

207	H	A	-	1A	H	-	F	-	C	E	XXVDC
1	2	3		4	5		6		7	8	9

1. 207 -- Basic series designation
2. Blank -- Standard type
   H -- High power type
3. Blank -- Standard Type
   A -- Double pin type
4. 1A -- Single pole normally open
5. C -- Contact material AgNi
   H -- Contact material AgSnO
6. Blank -- Standard type
   F -- Class F
7. C -- Flux tight
   S -- Sealed type washable
8. Blank -- Standard Type
   E -- CTI 250V
   E1 -- insulation materials for domestic appliances (IEC60335-1, ed.5)
9. XXVDC -- Coil voltage (please refer to the coil rating data for the availability)

Contact Rating

◆ 207

Resistive load	NO : 17A 240VAC 100K cycles 10A 240VAC at 105ºC 300K cycles (B10 value)

◆ 207H

Resistive load	NO : 17A 240VAC 100K cycles 16A 240VAC at 105ºC 100K cycles 10A 240VAC at 105ºC 300K cycles

Coil Rating (DC)

Rated voltage (V)	Rated current ±10 % at 23ºC (mA)	Coil resistance ±10 % at 23ºC (Ω)	Max. continuous voltage at 85ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
3	130	23	150 % of rated voltage	75 % of rated voltage	5 % of rated voltage	approx. 0.4W
5	79	63				
6	67	90				
9	44	203				
12	33	360				
18	22	810				
24	17	1440				
36	11	3240				
48	8	5760				

Specification

Contact material	AgSnO / AgNi alloy	
Contact resistance (1)	100mΩ Max.	
Operate time (1)	15ms Max.	
Release time (1)	10ms Max.	
Insulation resistance (1)	100MΩ Min. (DC 500V)	
Dielectric strength (1)	Between open contact : AC 1000V, 50/60Hz 1 min.	
	Between contact and coil : AC 2500V, 50/60Hz 1 min.	
Vibration resistance	Operating extremes	10~50Hz , amplitude 1.0 mm
	Damage limits	10~50Hz , amplitude 1.0 mm
Shock resistance	Operating extremes	10G
	Damage limits	100G
Life expectancy	Mechanical	10,000,000 operations (frequency 18,000 operations/hr)
	Electrical	See contact rating. (frequency 360 operations/hr)
Operating ambient temperature	-40～+85ºC (no freezing) (2)	
Weight	Approx. 15 g	

Note: (1) initial value

(2) special version of high temperature 105º C can be selected.

Safety Approval

Certified	UL	VDE
File No.	E88991	40025801

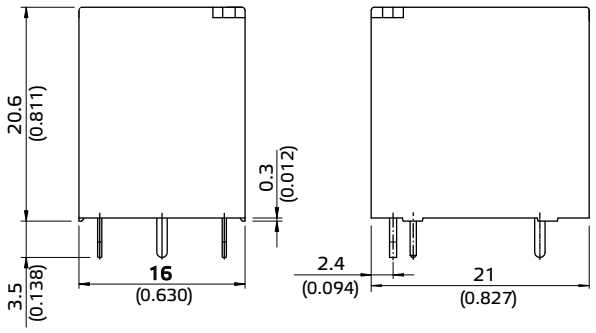
Safety Approval Rating

UL		VDE
207	207H	
20A 277VAC 1HP 125VAC TV-5 (for AgSnO contact)	20A 277VAC 1HP 125VAC	17A 250VAC T105

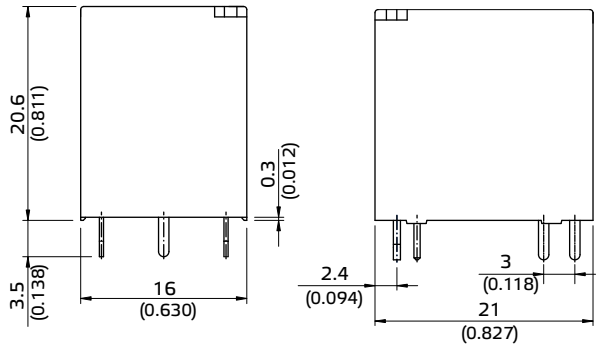
Note: Flux tight version is recommended in high temperature. If there is cleaning process and sealed type is selected, the vent-hole should be removed after the process.

Outline Dimensions

◆207,207H

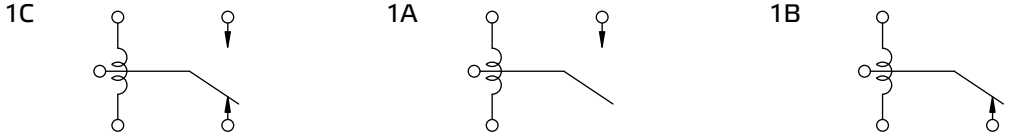


◆207A,207HA



Wiring Diagram

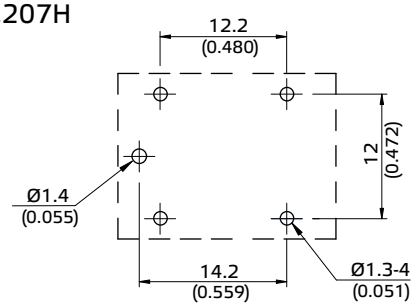
BOTTOM VIEW



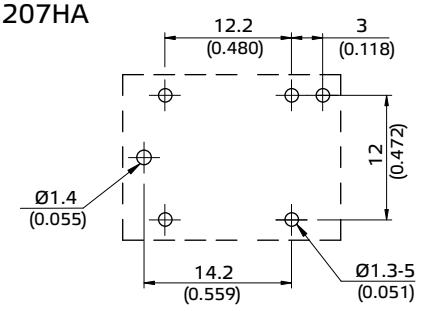
PC Board Layout

BOTTOM VIEW

◆207,207H

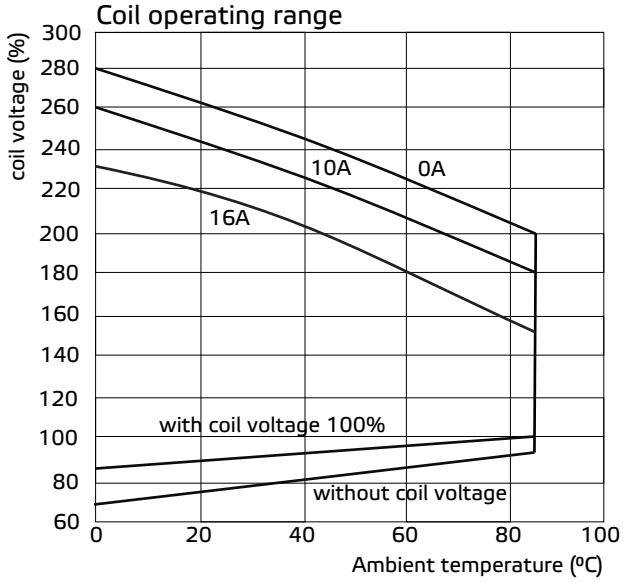


◆207A,207HA

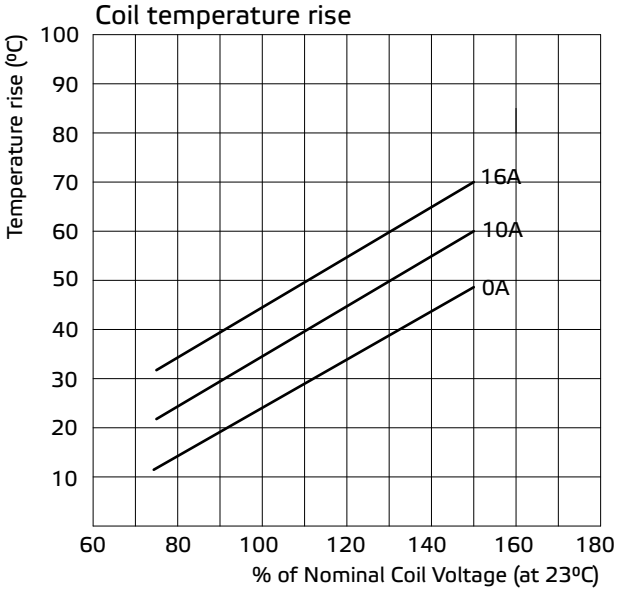


Engineering Data

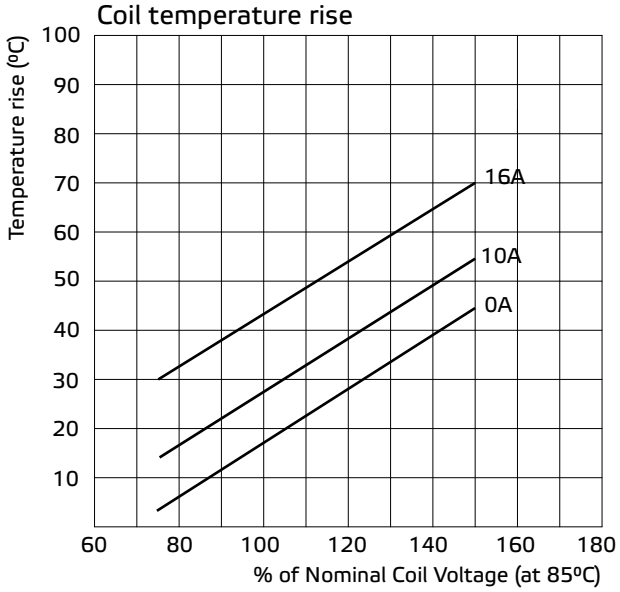
Coil operating range



Coil temperature rise



Coil temperature rise



507

Features

- High rating miniature PCB Relay.
- AC & DC coil are both available.
- UL/CUL and VDE approved.
- 17A 277VAC SPDT.
- 12A 277VAC DPDT.
- Low profile 15.7 and high insulation system class F
- High CTI 250 material & New Glow Wire Approved (E Version)
- Special version for inrush rating application is available. (507 IR type)
- Comply with RoHS-Directive 2011/65/EU

Type List

◆ Standard type

Terminal style	Contact form	Insulation system	Designation (provided with)	
			Flux tight	Sealed type washable
PCB terminal	1A (SPNO)	F	507-1AC-F-C	507-1AC-F-S
			507-1AH-F-C	507-1AH-F-S
	1C (SPDT)	F	507-1CC-F-C	507-1CC-F-S
			507-1CH-F-C	507-1CH-F-S
	2A (DPNO)	F	507-2AC-F-C	507-2AC-F-S
			507-2AH-F-C	507-2AH-F-S
	2C (DPDT)	F	507-2CC-F-C	507-2CC-F-S
			507-2CH-F-C	507-2CH-F-S

◆ High sensitive type (N) / Ultra-sensitive type (N1)

PCB terminal	1A (SPNO)	F	507N-1AC-F-C	507N-1AC-F-S
			507N1-1AC-F-C	507N1-1AC-F-S
			507N-1AH-F-C	507N-1AH-F-S
			507N1-1AH-F-C	507N1-1AH-F-S
	1C (SPDT)	F	507N-1CC-F-C	507N-1CC-F-S
			507N1-1CC-F-C	507N1-1CC-F-S
			507N-1CH-F-C	507N-1CH-F-S
			507N1-1CH-F-C	507N1-1CH-F-S
	2A (DPNO)	F	507N-2AC-F-C	507N-2AC-F-S
			507N-2AH-F-C	507N-2AH-F-S
	2C (DPDT)	F	507N-2CC-F-C	507N-2CC-F-S
			507N-2CH-F-C	507N-2CH-F-S

◆ High power type

PCB terminal	1A (SPNO)	F	507H-1AC-F-C	507H-1AC-F-S
			507H-1AH-F-C	507H-1AH-F-S
	1C (SPDT)	F	507H-1CC-F-C	507H-1CC-F-S
			507H-1CH-F-C	507H-1CH-F-S

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◆ High power type、High sensitive type (N)

PCB terminal	1A (SPNO)	F	507HN-1AC-F-C	507HN-1AC-F-S
			507HN-1AH-F-C	507HN-1AH-F-S
	1C (SPDT)	F	507HN-1CC-F-C	507HN-1CC-F-S
			507HN-1CH-F-C	507HN-1CH-F-S

Note：507A: Special footprint 5.0mm pinning version can be selected.

Ordering Information

507	H	N	-	1C	C	-	F	-	C	IR	XXVXC
1	2	3		4	5		6		7	8	9

1. 507 -- Basic series designation

2. Blank -- Standard type (1P - Terminal pitch 3.5mm)
   A -- Standard type and special terminal pitch (1P - Terminal pitch 5.0mm)
   H -- High power type (only for 1P type)

3. Blank -- Standard type (DC: 0.53 W) (AC: 0.75 VA)
   N -- High sensitive type (0.40 W)
   N1 -- Ultra-sensitive type (0.25 W)

4. 1A -- Single pole normally open
   1B -- Single pole normally closed
   1C -- Single pole double throw
   2A -- Double pole normally open
   2B -- Double pole normally closed
   2C -- Double pole double throw

5. C -- Contact material AgNi
   CA -- Contact material AgNi + Au
   H -- Contact material AgSnO
   HA -- Contact material AgSnO + Au

6. Blank -- Standard type
   F -- Class F

7. C -- Flux tight
   S -- Sealed type washable

8. Blank -- Standard type
   E -- CTI 250 V
   IR -- 507 Inrush type (only for H, 1A/1C type)

8. XXVXC -- Coil voltage (please refer to the coil rating data for the availability)

Contact Rating

Type	1P			2P
	507 - 507N	507N1	507H - 507HN	507 - 507N
Rated load (resistive)	12A 240VAC	10A 240VAC	16A 240VAC	8A 240VAC
Max. switching current	12A	10A	17A	8A
Max. switching voltage	277VAC	277VAC	277VAC	277VAC
Max. switching capacity	2880VA	2400VA	4080VA	1920VA

◆ Inrush type

Tungsten Lamp	NO:1500W 240VAC 30,000 ops (Inrush 110A)
Halogen Lamp	NO:1500W 240VAC 30,000 ops (Inrush 110A)

Coil Rating (DC)

◆ Standard Type

Rated voltage (V)	Rated current ±10% at 23ºC (mA)	Coil resistance ±10% at 23ºC (Ω)	Max. continuous voltage at 85ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
3	176	17	150 % of rated voltage	75 % of rated voltage	10 % of rated voltage	approx. 0.53W
5	106	47				
6	88	68				
9	59	153				
12	44	272				
15	35	425				
18	29	611				
24	22	1,087				
36	15	2,445				
48	11	4,347				

◆ High sensitive type (N)

Rated voltage (V)	Rated current ±10% at 23ºC (mA)	Coil resistance ±10% at 23ºC (Ω)	Max. continuous voltage at 85ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
3	133	22.5	150 % of rated voltage	70 % of rated voltage	10 % of rated voltage	approx. 0.40W
5	80	62				
6	67	90				
9	44	203				
12	33	360				
18	23	771				
24	17	1,440				
36	11	3,240				
48	9	5,520				

◆ Ultra-sensitive type (N1)

Rated voltage (V)	Rated current ±10% at 23ºC (mA)	Coil resistance ±10% at 23ºC (Ω)	Max. continuous voltage at 85ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
3	83	36	150 % of rated voltage	75 % of rated voltage	10 % of rated voltage	approx. 0.25W
5	50	100				
6	42	144				
9	28	324				
12	21	576				
18	14	1,296				
24	10	2,304				
36	7	5,184				

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Coil Rating (AC) [only for 507、507H]

Rated voltage (V)	Rated current ±10% at 23ºC (mA)	Coil resistance ±10% at 23ºC (Ω)	Max. continuous voltage at 70ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
6	125	23.4	150 % of rated voltage	80 % of rated voltage	15 % of rated voltage	approx. 0.75VA
12	62.5	100				
24	31.2	368				
42	17.8	1,188				
48	15.6	1,540				
100/110	7.45	6,880				
110/120	6.8	8,360				
200/220	3.75	26,700				
220/240	3.4	33,000				

Specification

Contact material	AgNi / AgSnO alloy	
Contact resistance (1)	100mΩ Max.	
Operate time (1)	20ms Max.	
Release time (1)	10ms Max.	
Insulation resistance (1)	1000MΩ Min. (DC 500V)	
Dielectric strength (1)	Between open contact : AC 1000V, 50/60Hz 1 min.	
	Between contact and coil : AC 5000V, 50/60Hz 1 min.	
	Between contact circuits : AC 3000V, 50/60Hz 1 min. (for 2P DC type) : AC 2500V, 50/60Hz 1 min. (for 2P AC type)	
Surge voltage withstand (1)	Between contact and coil : 10KV (1.2X50)μS	
Vibration resistance	Operating extremes	10~55Hz , amplitude 1.5 mm
	Damage limits	10~55Hz , amplitude 1.5 mm
Shock resistance	Operating extremes	10G
	Damage limits	100G
Life expectancy	Mechanical	30,000,000 operations (frequency 36,000 operations /hr)
		5,000,000 operations (for 2P AC type - frequency 18,000 operations/hr)
	Electrical	100,000 operations (frequency 360 operations /hr)
Operating ambient temperature	DC coil	-40~+85ºC (no freezing) (2)
	AC coil	-40~+70ºC (no freezing)
Weight	Approx. 10 g	

Note : (1) initial value
(2) special version of high temperature 105ºC can be selected

Safety Approval

Certified	UL / CUL	VDE
File No.	E88991	40006746

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Safety Approval Rating (VDE)

◆ DC coil

507H · 507HN	507 · 507N · 507N1	507 · 507N
	1P	2P
17A 250VAC T105	12A 250VAC T105	12A 250VAC T85 10A 250VAC T105

◆ AC coil

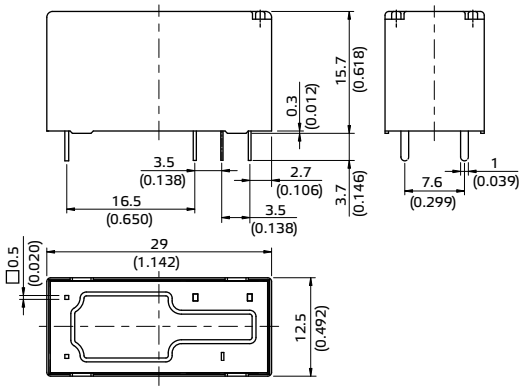
507H	507
17A 250VAC T85	1P:12A 250VAC T85 2P.10A 250VAC T85

Safety Approval Rating (UL/CUL)

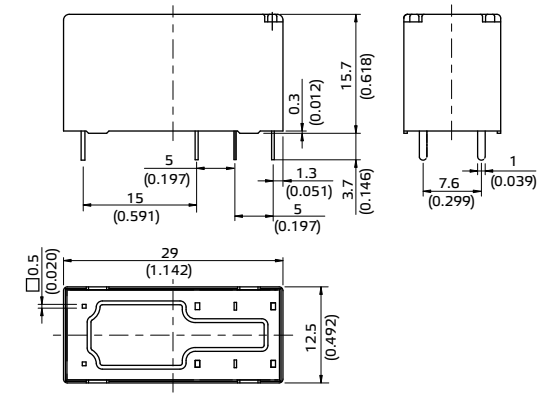
507		507 (2P)	507N1
C · CA	H · HA		
NO/NC: 17A 277VAC NO: 10FLA 250VAC 12A 30VDC 1HP 480VAC NC: 1/2HP 120/240/480VAC	NO/NC: 17A 277VAC 10FLA 250VAC NO: 1HP 120/240/480VAC TV-8 NC: 12A 30VDC 1/2HP 120/240/480VAC	NO/NC: 12A 277VAC NO:1/2HP 120/240VAC TV-5(H·HA type only) NC: 1/3HP 120/240VAC	17A 277VAC 12A 30VDC

Outline Dimensions

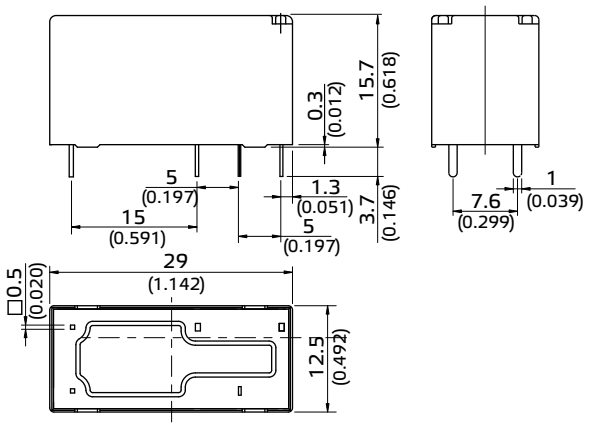
◆ 507 1P



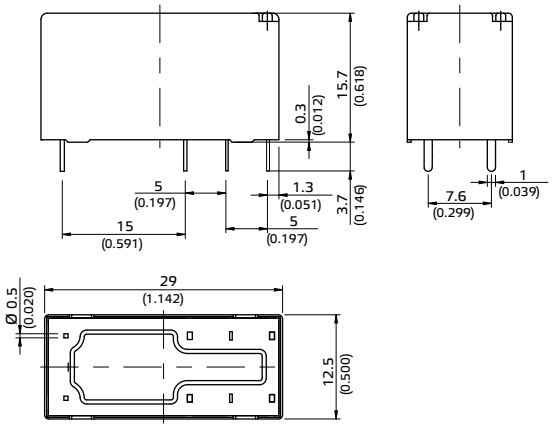
◆ 507H 1P



◆ 507A 1P



◆ 507 2P



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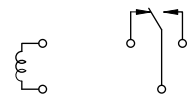
Wiring Diagram

BOTTOM VIEW

◆ 507 1P

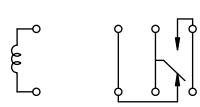
1C



1A

◆ 507H 1P

1C

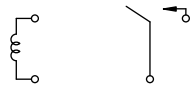


1A

◆ 507A 1P

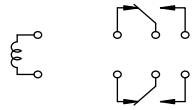
1C

1A

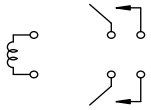


◆ 507 2P

2C



2A

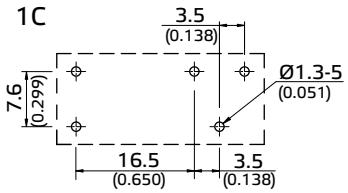


PC Board Layout

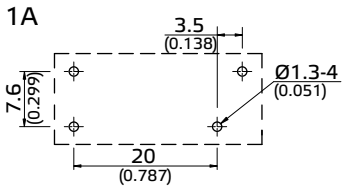
BOTTOM VIEW

◆ 507 1P

1C

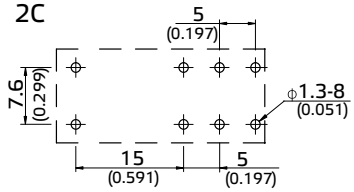


1A

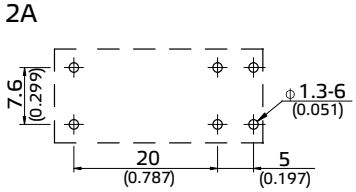


◆ 507 2P

2C

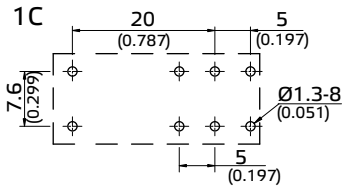


2A

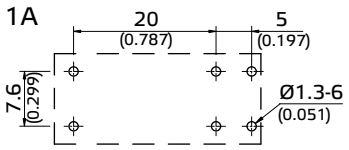


◆ 507H 1P

1C

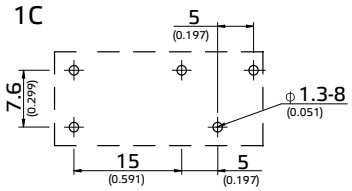


1A

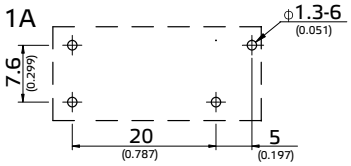


◆ 507A 1P

1C

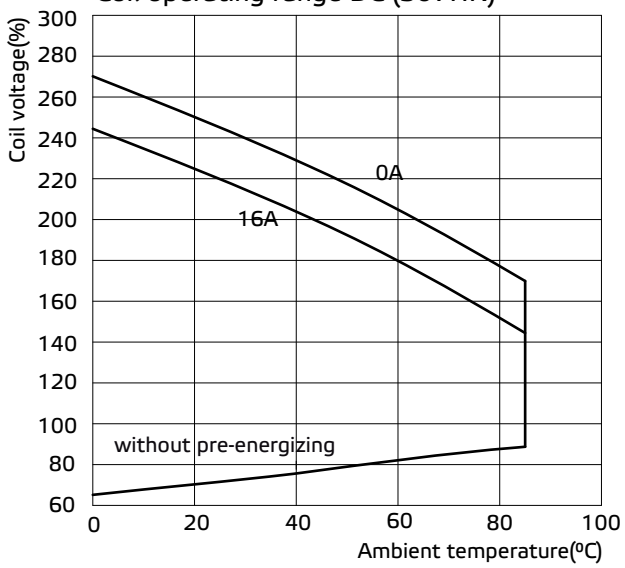


1A

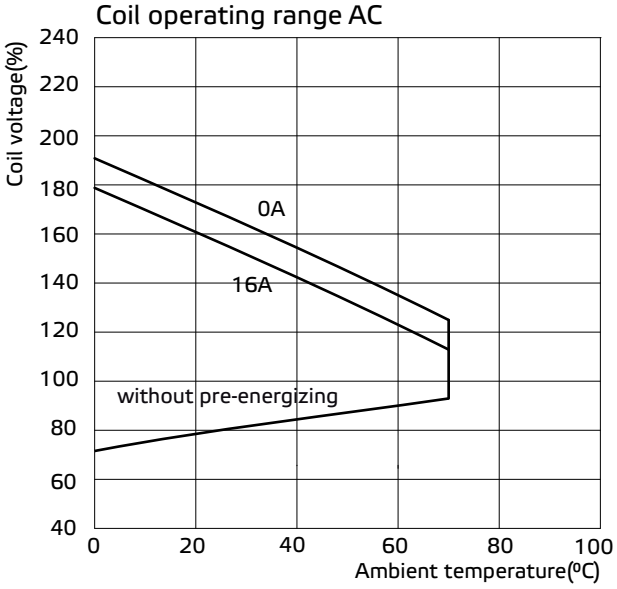


Engineering Data

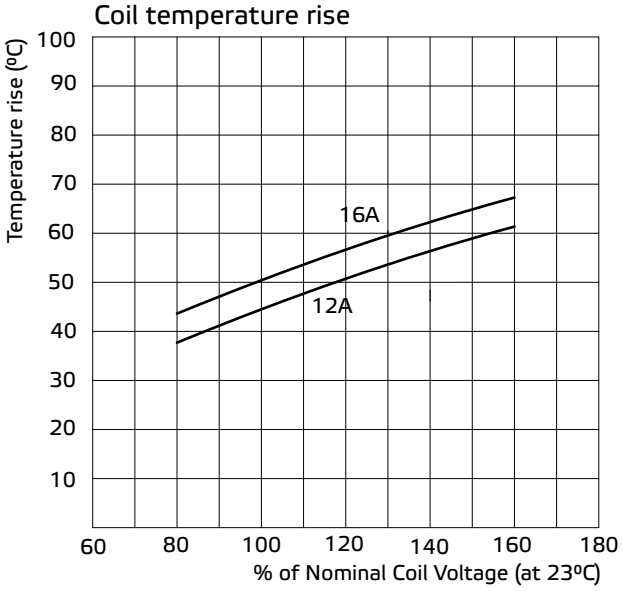
Coil operating range DC (507HN)



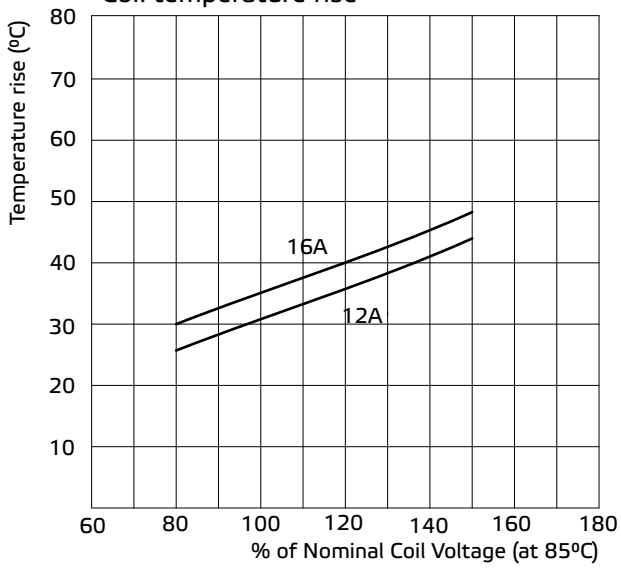
Coil operating range AC



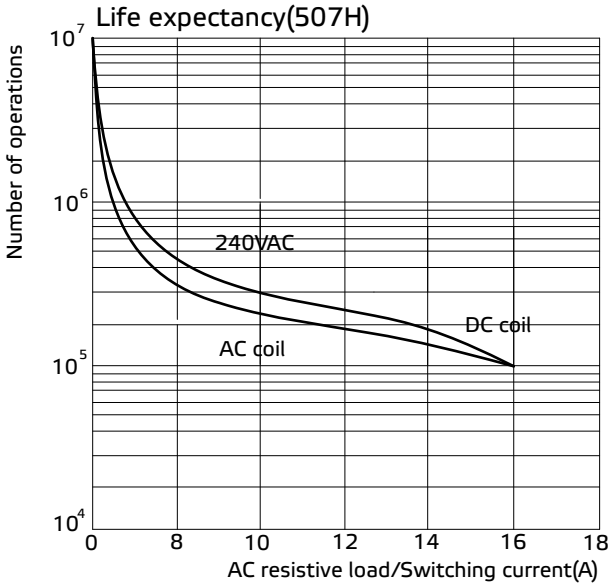
Coil temperature rise



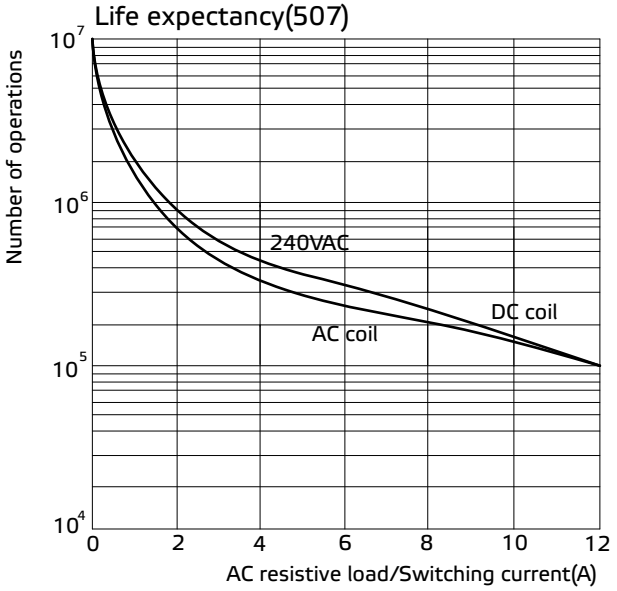
Coil temperature rise

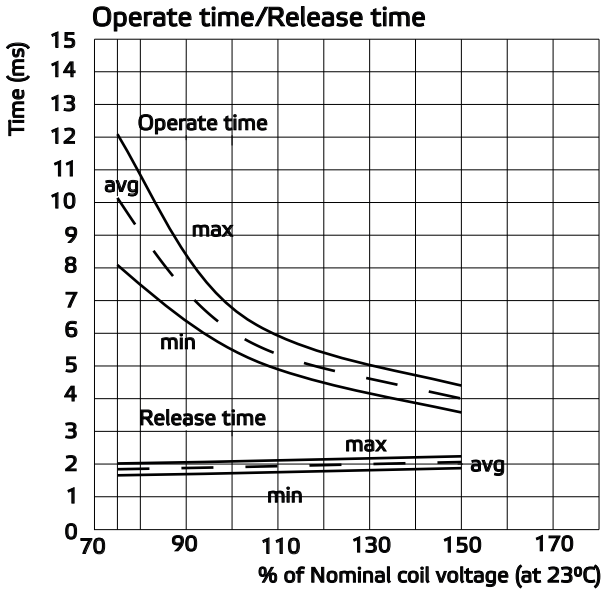


Life expectancy(507H)

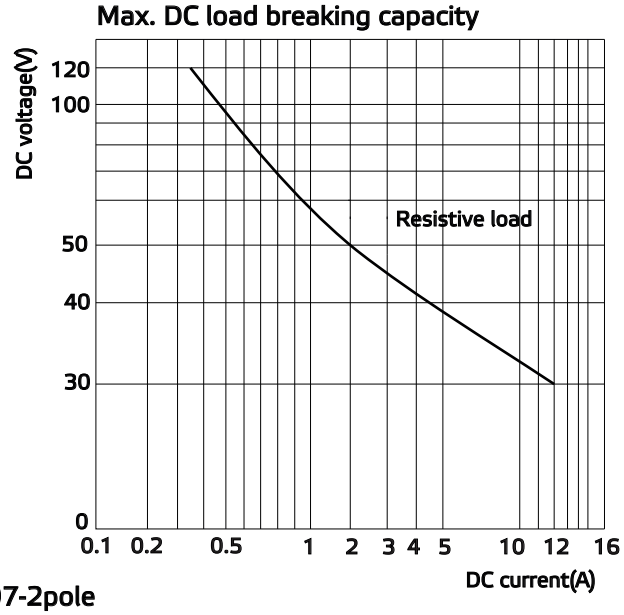


Life expectancy(507)

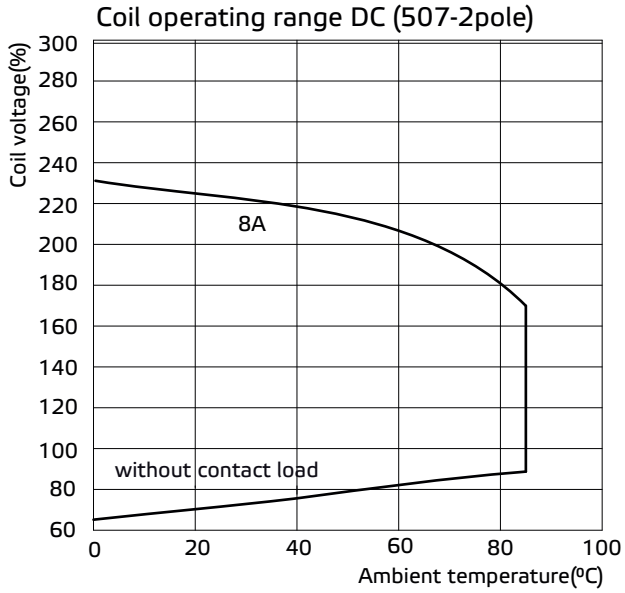


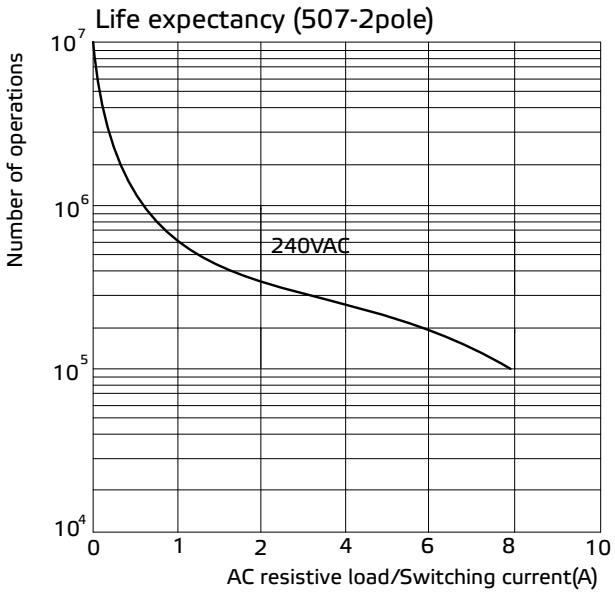


◆ 507/ 507H

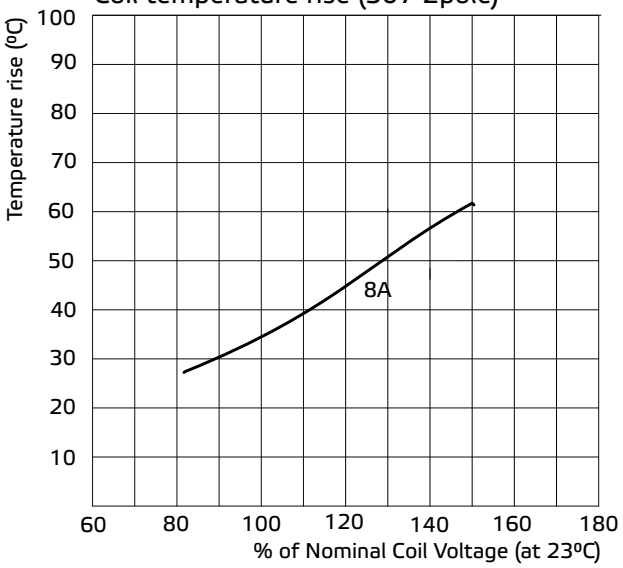


◆ 507-2pole

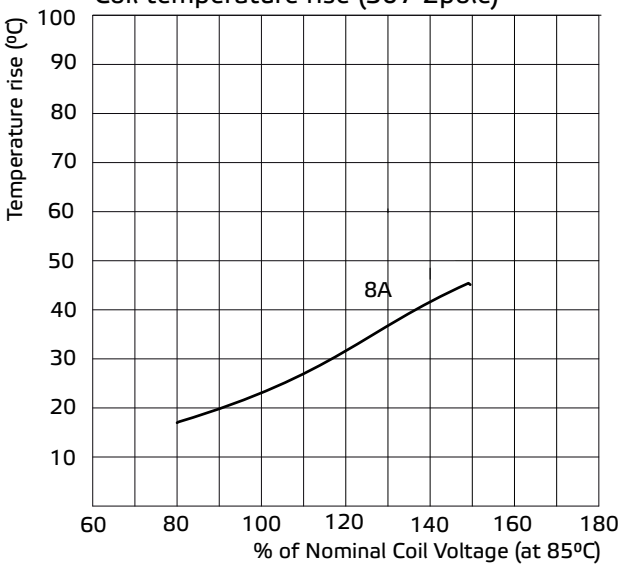




Coil temperature rise (507-2pole)

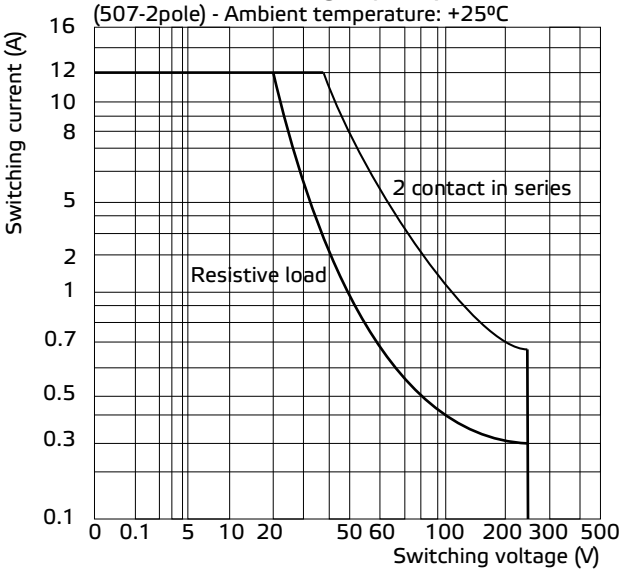


Coil temperature rise (507-2pole)



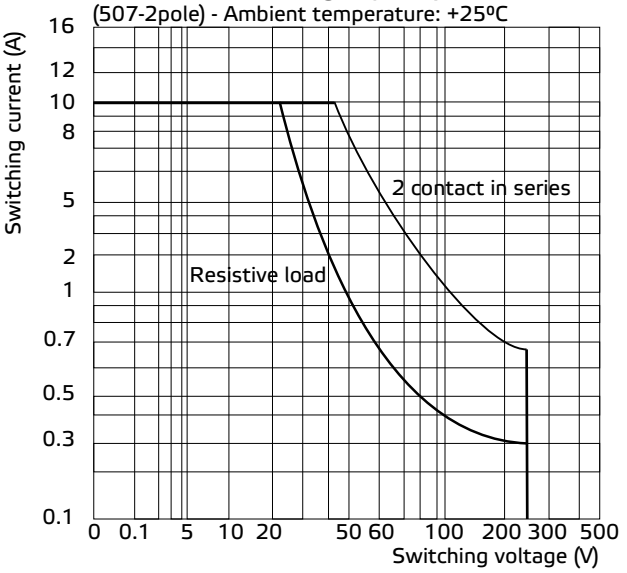
Maximum switching capacity DC-Coil

(507-2pole) - Ambient temperature: +25ºC

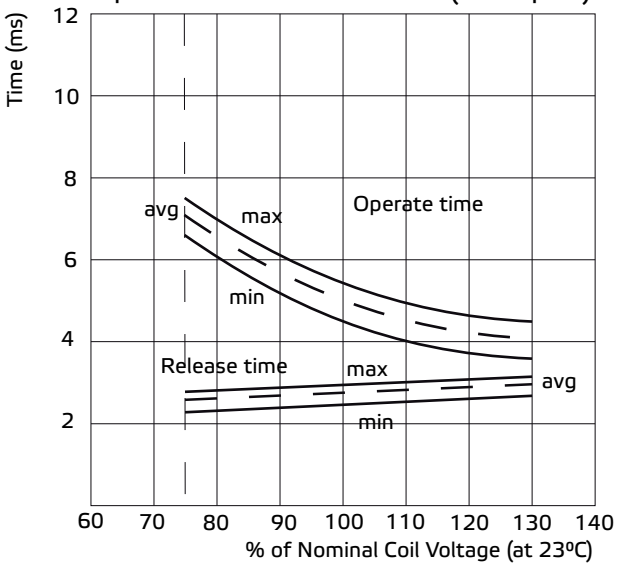


Maximum switching capacity AC-Coil

(507-2pole) - Ambient temperature: +25ºC



Operate time / Release time (507-2pole)



507HT

Features

- Low profile 15.7 mm PCB Power Relay.
- High rating 17A 277VAC.
- Design for high temperature 105ºC application.
- Available for 1C/O contact configurations ; flux-tight & sealed versions.
- HighCTI 250 materialm & new Glowwire test test approved (E-Version)
- Comply with RoHS-Directive 2011/65/EU:

Type List

◆ Standard type

Terminal style	Contact form	UL Insulation system approval	Designation (provided with)	
			Flux tight	Sealed type washable
PCB terminal	1A (SPNO)	F	507HT-1AH-F-C	507HT-1AH-F-S
	1C (SPDT)	F	507HT-1CH-F-C	507HT-1CH-F-S

◆ High sensitivity type

PCB terminal	1A (SPNO)	F	507HTN-1AH-F-C	507HTN-1AH-F-S
	1C (SPDT)	F	507HTN-1CH-F-C	507HTN-1CH-F-S

Ordering Information

507	HT	_	-	1C	H	-	F	-	C	E	XXVXC
1	2	3		4	5		6		7	8	9

1. 507 -- Basic series designation

2 . HT -- High power & high temperature type

3 . Blank -- Standard type (0.53W)
N -- High sensitive type (0.4W)

4 . 1A -- Single pole normally open
1C -- Single pole double throw

5 . H -- Contact material AgSnO

6 . F -- Class F

7 . C -- Flux tight
S -- Seales type washable

8 . Blank -- Standard type
E -- CTI 250V

9 . XXVXC -- Coil voltage (please refer to the coil rating data for the availability)

Contact Rating

Rated load (resistive)	NO: 16A 240VAC, 100K ops. 16A 240VAC 105ºC, 100K ops., frequency 360 ops./hr (B10 value) 10A 240VAC 105ºC, 300K ops., frequency 360 ops./hr (B10 value)
Max. switching current	17A
Max. switching voltage	277VAC
Max. switching capacity	4080VA

507HT

Coil Rating (DC)

◆ Standard type

Rated voltage (V)	Rated current ±10% at 23ºC (mA)	Coil resistance ±10% at 23ºC (Ω)	Max. continuous voltage at 105ºC	Pick up voltage(Max.) at 23ºC	Drop out voltage(Min.) at 23ºC	Power consumption at rated voltage
3	176	17	150 % of rated voltage	75 % of rated voltage	10 % of rated voltage	approx. 0.53W
5	106	47				
6	88	68				
9	59	153				
12	44	272				
15	35	425				
18	29	611				
24	22	1,087				
36	15	2,445				
48	11	4,347				

◆ High sensitivity type (N)

Rated voltage (V)	Rated current ±10% at 23ºC (mA)	Coil resistance ±10% at 23ºC (Ω)	Max. continuous voltage at 105ºC	Pick up voltage(Max.) at 23ºC	Drop out voltage(Min.) at 23ºC	Power consumption at rated voltage
3	133	22.5	150 % of rated voltage	70 % of rated voltage	10 % of rated voltage	approx. 0.40W
5	80	62				
6	67	90				
9	44	203				
12	33	360				
18	23	771				
24	17	1,440				
36	11	3,240				
48	9	5,520				
60	6.7	9,000±15%				
110	3.7	30,000±15%				

Specification

Contact material	AgSnO alloy	
Contact resistance(1)	100mΩ Max. (1A/6VDC by 4 pipes mΩ meter)	
Operate time(1)	20ms Max.	
Release time (1)	10ms Max.	
Insulation resistance(1)	1000MΩ Min. (DC 500V)	
Dielectric strength(1)	Between open contact : AC 1000V, 50/60Hz 1 min.	
	Between contact and coil : AC 5000V, 50/60Hz 1 min.	
Surge voltage withstand(1)	Between contact and coil : 10KV (1.2X50)μS	
Vibration resistance	Operating extremes	10~55Hz , amplitude 1.5 mm
	Damage limits	10~55Hz , amplitude 1.5 mm
Shock resistance	Operating extremes	10G
	Damage limits	100G
Life expectancy	Mechanical	30,000,000 operations (frequency 36,000 operations /hr)
Operating ambient temperature	-40 ~+105ºC (no freezing)	
Weight	Approx. 10 g	

Note : (1) initial value

507HT

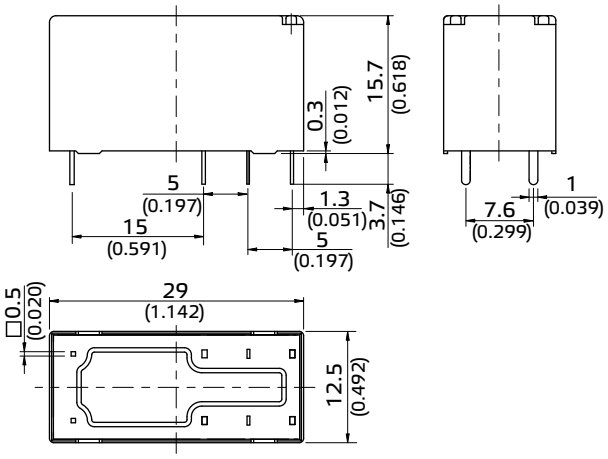
Safety Approval

Certified	UL / CUL	VDE
File No.	E88991	40006746

Safety Approval Rating

UL/CUL	VDE
17A 277VAC	17A 250VAC T105

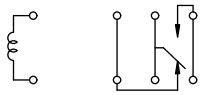
Outline Dimensions



Wiring Diagram

BOTTOM VIEW

1C

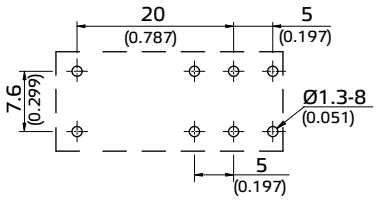


1A

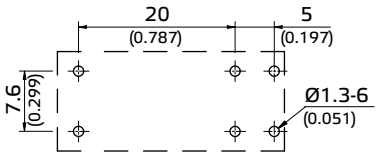
PC Board Layout

BOTTOM VIEW

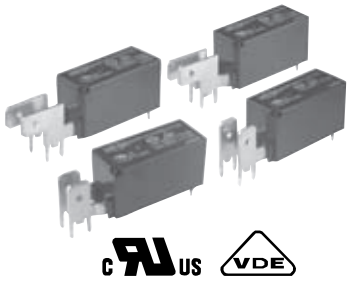
1C



1A



881WP



Features

- Low Profile 15.7mm w/faston terminals.
- High Rating 17A 277VAC.
- High temperature withstand up to 125ºC.
- High CTI 250 material & new Glow Wire test approved (E-Version).
- UL/CUL - VDE approvals.
- Comply with RoHS-Directive 2011/65/EU.

Type List

Terminal style	Contact form	UL Insulation system approval	Designation (provided with)	
			Flux tight	Sealed type washable
WP1 (High power type, Quick terminal & PCB terminals)- 5.0mm pitch	1A (SPNO)	F	881WP1-1AC-F-C	881WP1-1AC-F-S
WP2 (High power type, Quick terminal & PCB terminals)- 7.5mm pitch	1A (SPNO)	F	881WP2-1AC-F-C	881WP2-1AC-F-S
WP3 (High power type, Quick terminal & PCB terminals)- 5.0mm pitch	1A (SPNO)	F	881WP3-1AC-F-C	881WP3-1AC-F-S
WP4 (High power type, Quick terminal & PCB terminals)- 7.5mm pitch	1A (SPNO)	F	881WP4-1AC-F-C	881WP4-1AC-F-S

Ordering Information

881	WP1	-	1A	C	-	F	-	C	E	XXVDC
1	2		3	4		5		6	7	8

1. 881 -- Basic series designation

2. WP1 -- High power type w/quick connect & PCB terminals - 5.0mm pitch
   WP2 -- High power type w/quick connect & PCB terminals - 7.5mm pitch
   WP3 -- High power type w/horizontal quick connect & PCB terminals - 5.0mm pitch
   WP4 -- High power type w/horizontal quick connect & PCB terminals - 7.5mm pitch

3. 1A -- Single pole normally open
   1B -- Single pole normally closed

4. C -- Contact material AgNi
   CA -- Contact material AgNi + Au

5. Blank -- Standard type
   F -- Class F

6. C -- Flux tight
   S -- Sealed type washable

7. Blank -- Standard type
   E --CTI 250V

8. XXVDC -- Coil voltage (please refer to the coil rating data for the availability)

Note: Please contact Song Chuan for 1B type detailed specification.

881WP

Contact Rating

Rated load (resistive)	16A 240VAC 105ºC 75K ops., 11A 240VAC 105ºC typ. 300K ops.
Max. switching current	17A
Max. switching voltage	277VAC
Max. switching capacity	4080VA

Coil Rating (DC)

Rated voltage (V)	Rated current ±10 % at 23ºC (mA)	Coil resistance at 23ºC (Ω)	Max. continuous voltage at 105ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
5	80	62±10%	110% of rated voltage	70% of rated voltage	10% of rated voltage	approx. 0.4W
6	67	90±10%				
9	44	203±10%				
12	33	360±10%				
18	23	771±10%				
24	17	1440±10%				
36	11.1	3240±10%				
48	8.7	5520±10%				
60	8	3740±10%				

Specification

Contact material	AgNi alloy	
Contact resistance (1)	100mΩ Max.	
Operate time (1)	20ms Max.	
Release time (1)	10ms Max.	
Insulationresistance (1)	1000MΩ Min. (DC 500V)	
Surge voltage withstand (1)	Between contact and coil : 10KV (1.2X50)μS	
Dielectric strength (1)	Between open contact : AC 1000V, 50/60Hz 1 min.	
	Between contact and coil : AC 5000V, 50/60Hz 1 min.	
Vibration resistance	Operating extremes	10~55Hz , amplitude 1.5 mm
	Damage limits	10~55Hz , amplitude 1.5 mm
Shock resistance	Operating extremes	10G
	Damage limits	100G
Life expectancy	Mechanical	10,000,000 operations (frequency 72,000 operations /hr)
	Electrical	100,000 operations (frequency 360 operations /hr)
Operating ambient temperature	-40 ~ +105ºC (no freezing) (2)	
Weight	Approx. 13 g	

Note : (1) initial value

(2) special version of high temperature 125ºC can be selected

881WP

Safety Approval

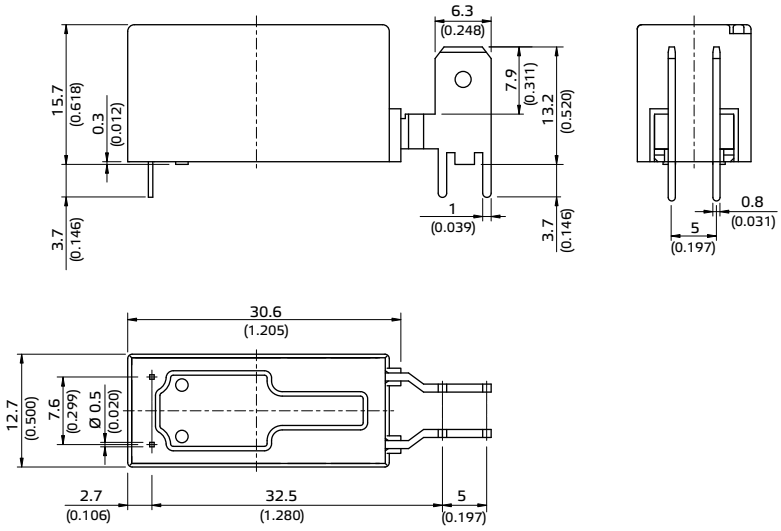
Certified	UL / CUL	VDE
File No.	E88991	132905

Safety Approval Rating

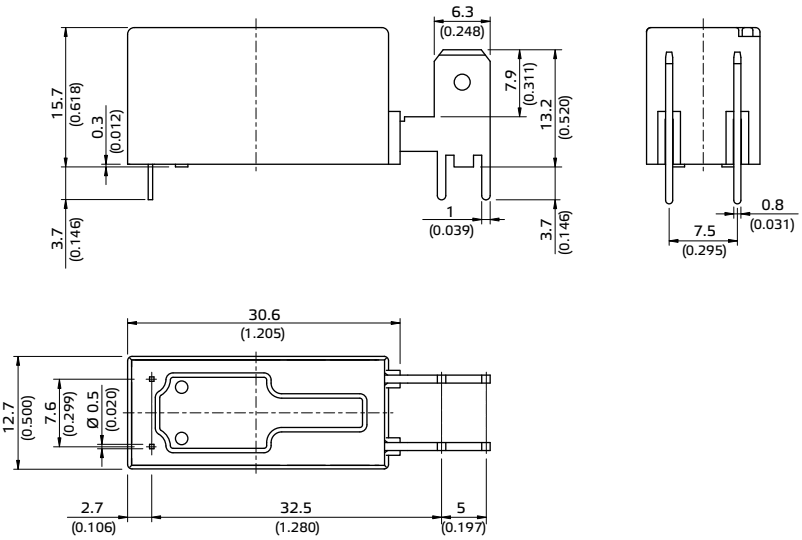
UL / CUL	VDE
17A 277VAC 10A 400VAC	12A 250VAC T125 10A 400VAC T125 17A 250VAC T105

Outline Dimensions

◆ 881WP1

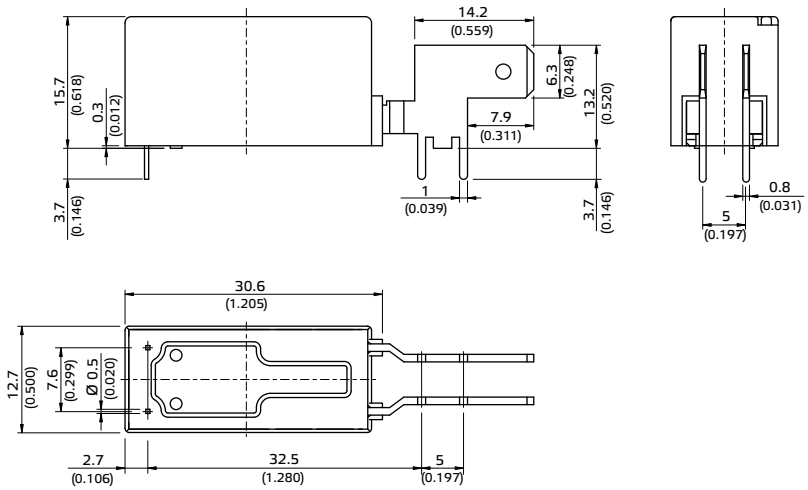


◆ 881WP2

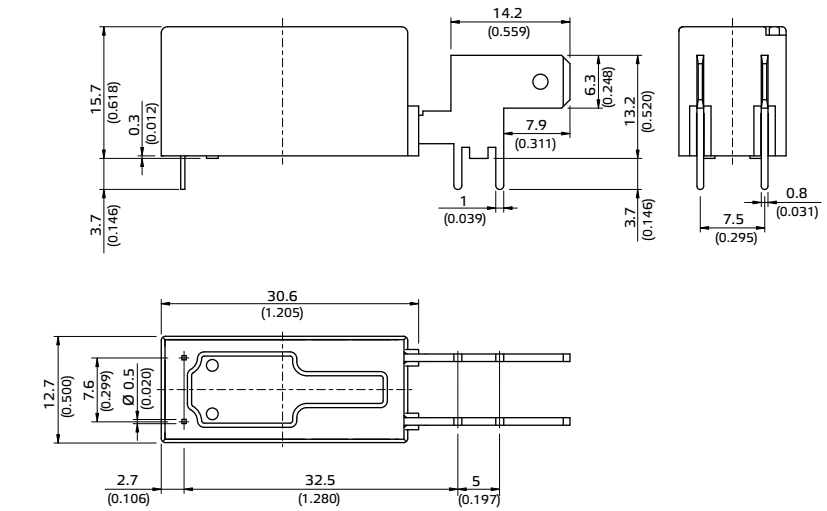


881WP

◆ 881WP3



◆ 881WP4



Wiring Diagram

BOTTOM VIEW

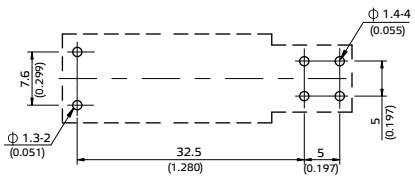
1A

1B

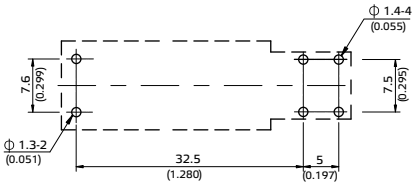
PC Board Layout

BOTTOM VIEW

◆ 881WP1

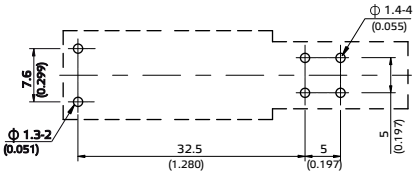


◆ 881WP2

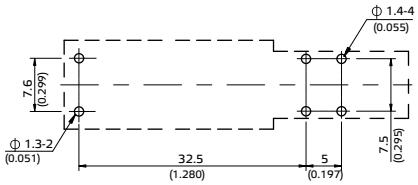


881WP

◆ 881WP3

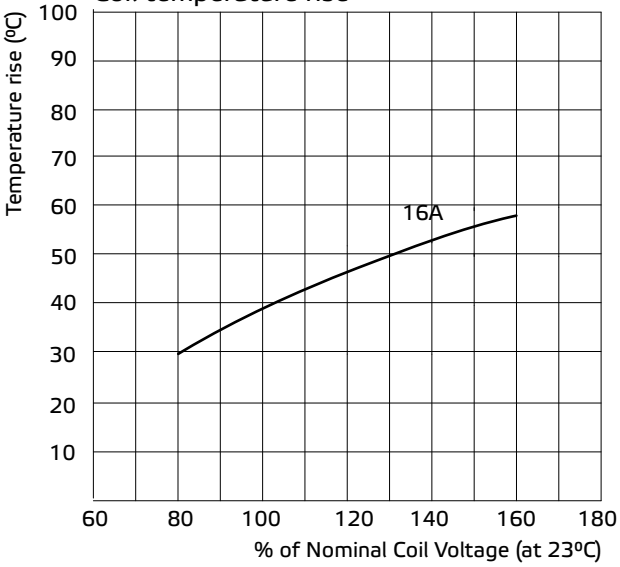


◆ 881WP4

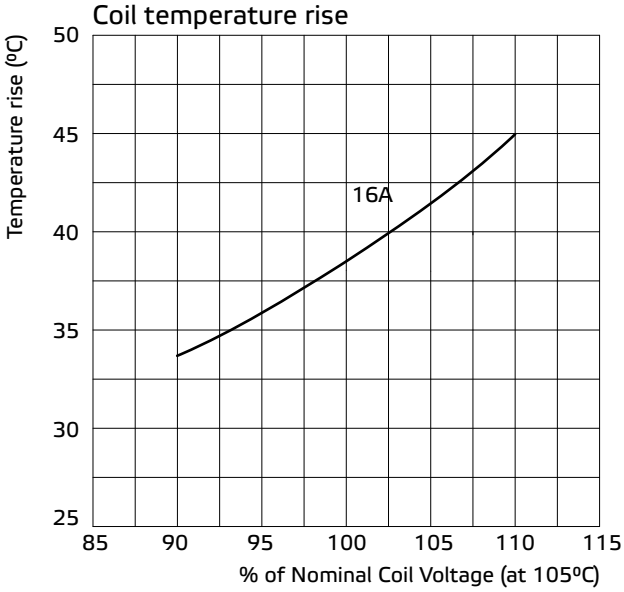


Engineering Data

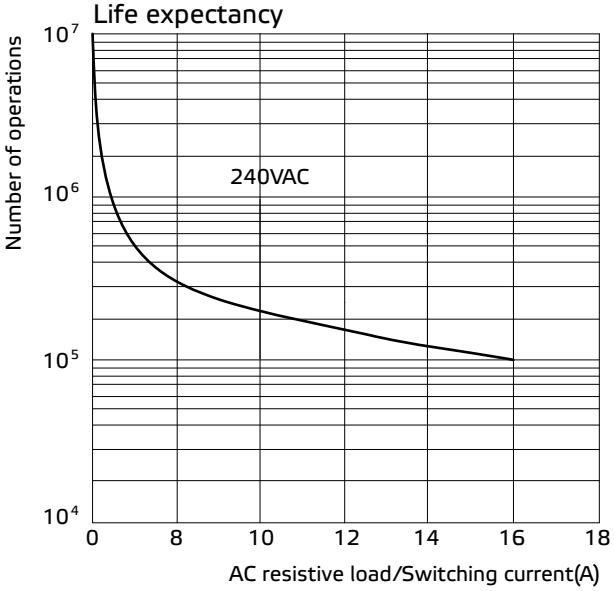
Coil temperature rise



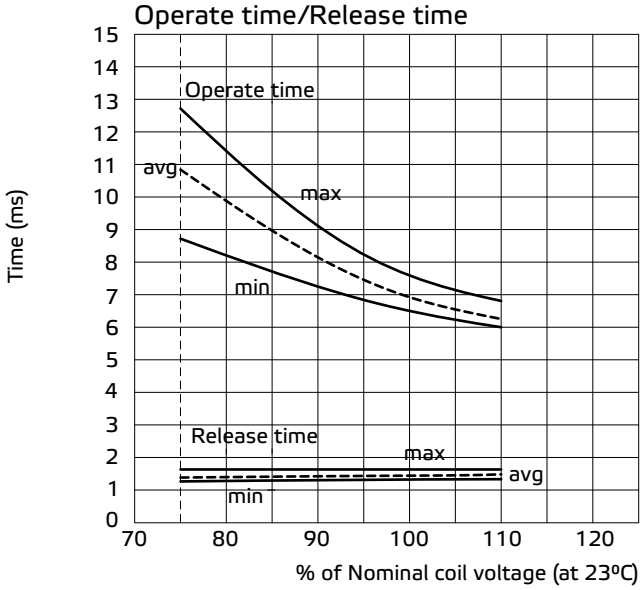
Coil temperature rise



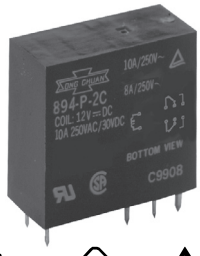
Life expectancy



Operate time/Release time



894



Features

- 8A/12A miniature PCB Power Relay.
- Large contact gap : 2mm/1.5mm.
- High dielectric strength.
- Epoxy seal type and sealed flux free are both available.
- Design for PV inverter, UPS and power supply applications.
- Comply with RoHS-Directive 2011/65/EU.

Type List

◆ Standard Type

Terminal style	Contact form	Contact gap	Designation (provided with)	
			Flux tight	Sealed type washable
PCB terminal	2A (DPNO)	1.5mm	894-2AC1-F-C	894-2AC1-F-S
			894-2ACA1-F-C	894-2ACA1-F-S
		2.0mm	894-2AC2-F-C	894-2AC2-F-S
			894-2ACA2F-C	894-2ACA2-F-S
		1.5mm	894-2AH1-F-C	894-2AH1-F-S
			894-2AHA1-F-C	894-2AHA1-F-S
		2.0mm	894-2AH2-F-C	894-2AH2-F-S
			894-2AHA2-F-C	894-2AHA2-F-S
	2C (DPDT)	1.5mm	894-2CC1-F-C	894-2CC1-F-S
			894-2CCA1-F-C	894-2CCA1-F-S
		2.0mm	894-2CC2-F-C	894-2CC2-F-S
			894-2CCA2-F-C	894-2CCA2-F-S
		1.5mm	894-2CH1-F-C	894-2CH1-F-S
			894-2CHA1-F-C	894-2CHA1-F-S
		2.0mm	894-2CH2-F-C	894-2CH2-F-S
			894-2CHA2-F-C	894-2CHA2-F-S

◆ High Power Type

PCB terminal	2A (DPNO)	1.5mm	894H-2AC1-F-C	894H-2AC1-F-S
			894H-2ACA1-F-C	894H-2ACA1-F-S
		2.0mm	894H-2AC2-F-C	894H-2AC2-F-S
			894H-2ACA2-F-C	894H-2ACA2-F-S
		1.5mm	894H-2AH1-F-C	894H-2AH1-F-S
			894H-2AHA1-F-C	894H-2AHA1-F-S
		2.0mm	894H2AH2-F-C	894H2AH2-F-S
			894H-2AHA2-F-C	894H-2AHA2-F-S
	2C (DPDT)	1.5mm	894H-2CC1-F-C	894H-2CC1-F-S
			894H-2CCA1-F-C	894H-2CCA1-F-S

PCB terminal	2C (DPDT)	2.0mm	894H-2CC2-F-C	894H-2CC2-F-S
			894H-2CCA2-F-C	894H-2CCA2-F-S
		1.5mm	894H-2CH1-F-C	894H-2CH1-F-S
			894H-2CHA1-F-C	894H-2CHA1-F-S
		2.0mm	894H-2CH2-F-C	894H-2CH2-F-S
			894H-2CHA2-F-C	894H-2CHA2-F-S

◆ High Sensitive Type

Terminal style	Contact form	Designation (provided with)	
		Flux tight	Sealed type washable
PCB terminal	2A (DPNO)	894N-2AC-F-C	894N-2AC-F-S
		894N-2ACA-F-C	894N-2ACA-F-S
		894N-2AH-F-C	894N-2AH-F-S
		894N-2AHA-F-C	894N-2AHA-F-S
	2C (DPDT)	894N-2CC-F-C	894N-2CC-F-S
		894N-2CCA-F-C	894N-2CCA-F-S
		894N-2CH-F-C	894N-2CH-F-S
		894N-2CHA-F-C	894N-2CHA-F-S

Ordering Information

894	H	N	-	2C	C	1	-	F	-	C	XXVDC
1	2	3		4	5	6		7		8	9

1. 894 -- Basic series designation

2. Blank -- Standard type
   H -- High power type

3. Blank -- Standard type(0.8 W; 1.4 W for 2CX2 only)
   N -- High sensitive type (0.53W)

4. 2A -- Double pole normally open
   2B -- Double pole normally closed
   2C -- Double pole double throw

5. C -- Contact material AgNi
   CA -- Contact material AgNi + Au
   H -- Contact material AgSnO
   HA -- Contact material AgSnO + Au

6. Blank -- Standard type
   1 -- Contact gap ≧1.5mm
   2 -- Contact gap ≧2.0mm

7. Blank -- Standard type
   F -- Class F

8. C -- Flux tight
   S -- Sealed type washable

9. XXVDC -- Coil voltage (please refer to the coil rating data for the availability).

Contact Rating

Type	894	894H
Resistive load	8A240VAC	NO：12A 240VAC NC：10A 240VAC

Coil Rating (DC)

◆ Standard Type

Rated voltage (V)	Rated current ±10% at 23ºC (mA)	Coil resistance ±10% at 23ºC (Ω)	Max. continuous voltage at 70ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
3	265	11.3	150 % of rated voltage	# of rated voltage (See note)	5 % of rated voltage	approx. 0.8W
5	161	31				
6	133	45				
9	89.1	101				
12	66.6	180				
18	44.4	405				
24	32.4	740				
48	16.7	2880				
60	13.3	4500				
110	7.3	15125				

Notes: # = 75% Contact form 2A / Contact gap 1.5mm only
= 85% Contact form 2C / Contact gap 1.5mm only
= 85% Contact form 2A / Contact gap 2.0mm only

◆ Standard Type (for 〝-2CX2〞 only)

Rated voltage (V)	Rated current ±10% at 23ºC (mA)	Coil resistance ±10% at 23ºC (Ω)	Max. continuous voltage at 70ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
3	468	6.4	130 % of rated voltage	85 % of rated voltage	5 % of rated voltage	approx. 1.4W
5	277	18				
6	230	26				
9	155	58				
12	117	102				
18	78	230				
24	58	410				
48	29	1650				
60	23	2570				
110	13	8640				

894

◆ High SensitiveType

Rated voltage (V)	Rated current ±10% at 23ºC (mA)	Coil resistance ±10% at 23ºC (Ω)	Max. continuous voltage at 70ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
3	175	17.1	150 % of rated voltage	75 % of rated voltage	5 % of rated voltage	approx. 0.53W
5	107	46.7				
6	87	68.7				
9	59	153.2				
12	44	272				
18	30	610				
24	22	1,081				
48	11	4,350				
60	8.8	6,790				
110	4.8	22,800				

Specification

Contact material	AgNi / AgSnO alloy	
Contact resistance(1)	100mΩ Max.	
Operate time(1)	20ms Max.	
Release time(1)	15ms Max.	
Insulation resistance(1)	1000MΩ Min. (DC 500V)	
Dielectric strength(1)	Between open contact : AC 2500V , 50/60Hz 1 min. AC 1000V , 50/60Hz 1 min. (for 894N/894HN)	
	Between contact circuits : AC 2500V , 50/60Hz 1 min.	
	Between contact and coil: AC 5000V , 50/60Hz 1 min.	
Vibration resistance	Operating extremes	10~55Hz , amplitude 1.5 mm
	Damage limits	10~55Hz , amplitude 1.5 mm
Shock resistance	Operating extremes	10G
	Damage limits	100G
Life expectancy	Mechanical	3,000,000 operations (frequency 18,000 operations/hr)
		300,000 operations (for contact gap 2mm type) (frequency 9,000 operations/hr)
	Electrical	30,000 operations (frequency 360 operations/hr)
Operating ambient temperature	-40~+70ºC (no freezing)	
Weight	Approx. 17 g	

Note : (1) initial value

Safety Approval

Certified	TUV	CSA / CUS	UL / CUL	VDE
File No.	R 50008226	1223057	E88991	40007827

Safety Approval Rating

◆ UL/CUL、CSA/CUS

894		894H	
C 、CA	H 、HA	C 、CA	H 、HA
8A 277VAC 1/4HP 125VAC 1/2HP 250VAC	8A 277VAC 1/4HP 125VAC 1/2HP 250VAC TV-3 (NO)	12A 277VAC 1/3HP 125VAC	12A 277VAC 1/3HP 125VAC 3/4HP 250VAC (NO) TV-5(NO)

◆ VDE

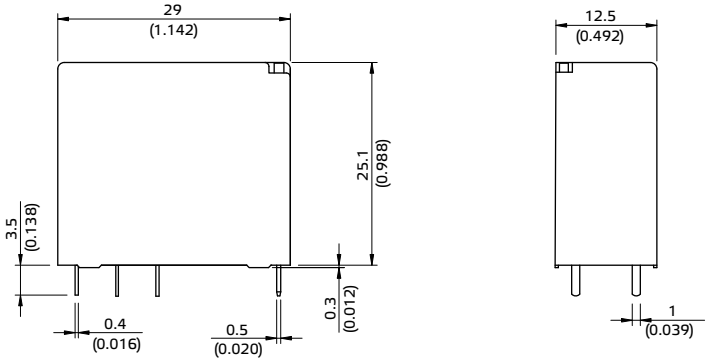
894	894N	894H	894HN
8A 250VAC T55	8A 250VAC T70	10A 250VAC T55	10A 250VAC T70

◆ TUV

894	894H
8A 277VAC	12A 250VAC

894

Outline Dimensions

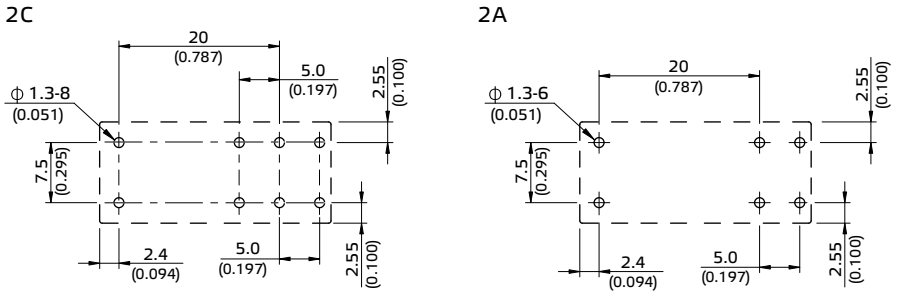


Wiring Diagram

BOTTOM VIEW

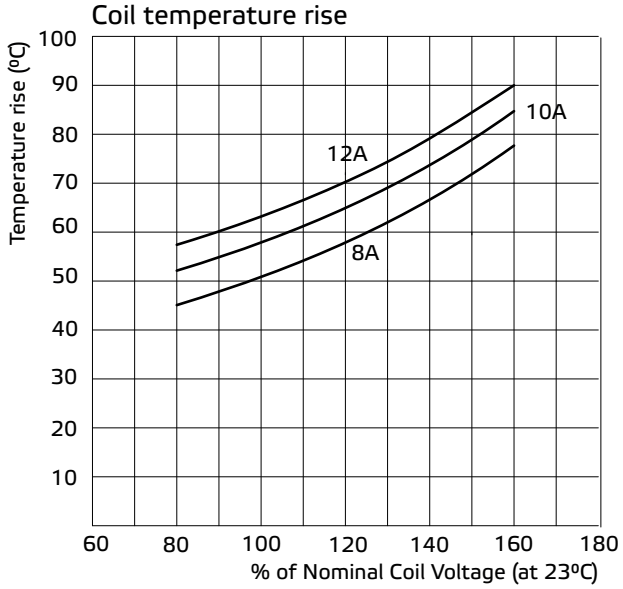
PC Board Layout

BOTTOM VIEW

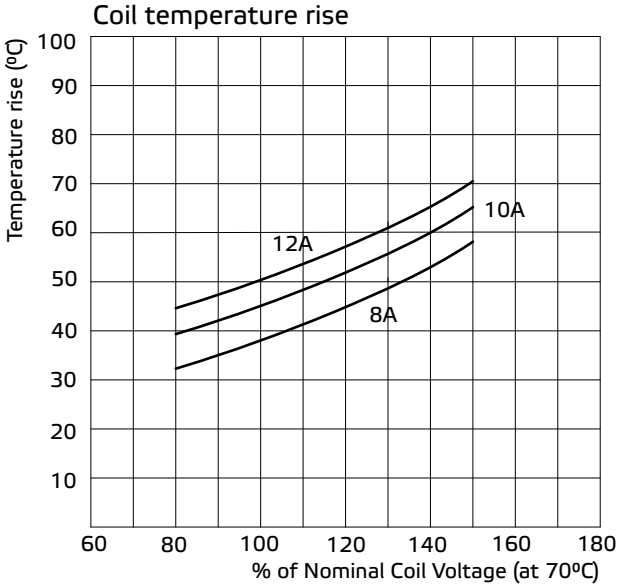


Engineering Data

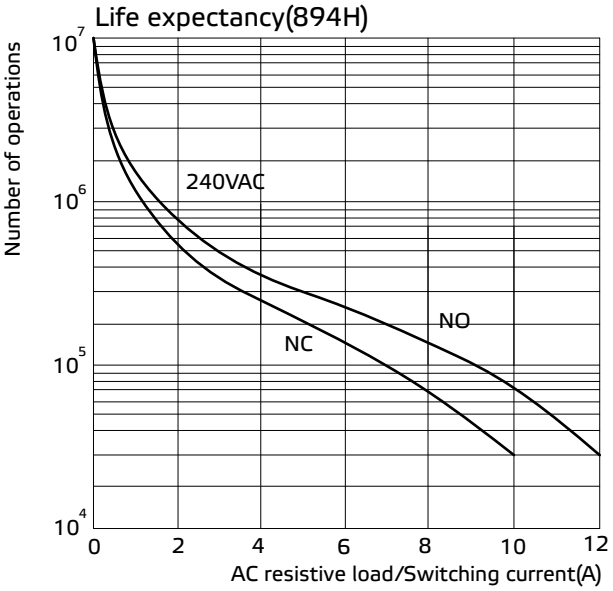
Coil temperature rise



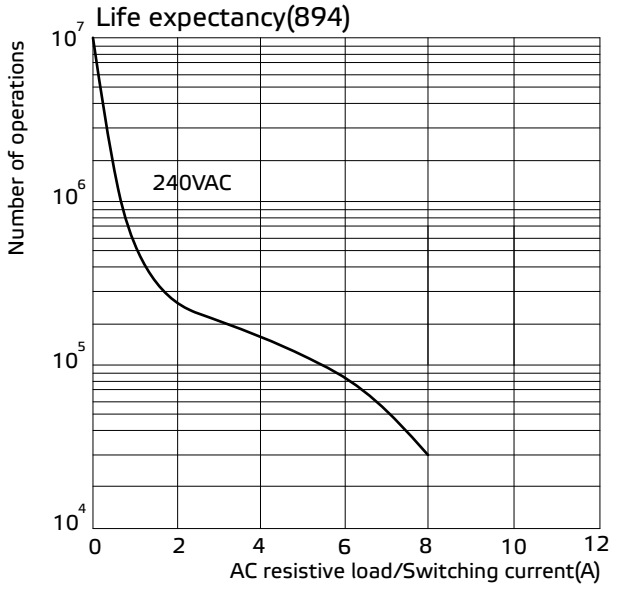
Coil temperature rise



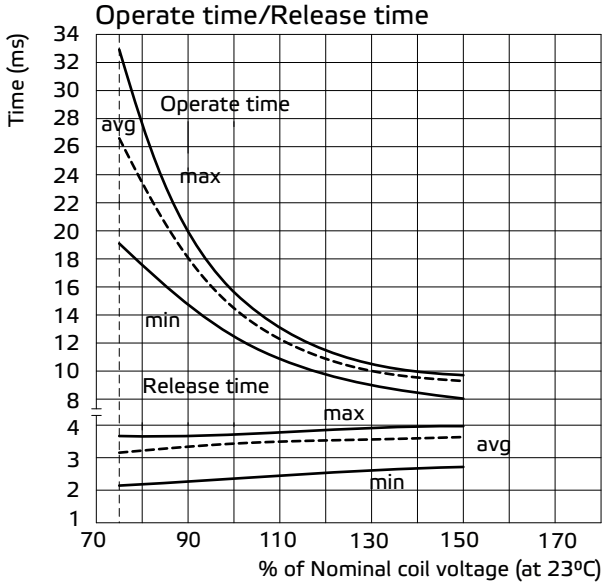
Life expectancy(894H)



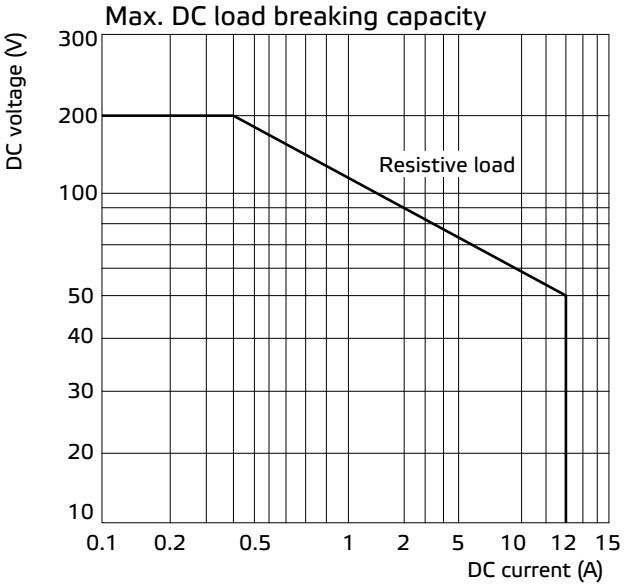
Life expectancy(894)



Operate time/Release time



Max. DC load breaking capacity



793

Features

- High rating general purpose miniature PCB Power Relays.
- Optional for 700mW coil and 530mW coil.
- 5mm planning 16A TV-10 ideally form high inrush current breaking application for UPS, power supply and
- Heading Element control of Home Appliances, and lighting controls.
- High dielectric strength 5000V between coil and contacts, 1000V between contacts.
- Optional for sealed flux free & sealed washable types.
- Comply with RoHS-Directive 2011/65/EU.

Type List

Terminal style	Contact form	UL Insulation system approval	Designation (provided with)	
			Flux tight	Sealed type washable
PCB terminal	1A (SPNO)	----------	793-P-1A	793-P-1A-S
		F	793-P-1A-F	793-P-1A-F-S
	1B (SPNC)	----------	793-P-1B	793-P-1B-S
		F	793-P-1B-F	793-P-1B-F-S
	1C (SPDT)	----------	793-P-1C	793-P-1C-S
		F	793-P-C-F	793-P-C-F-S

Ordering Information

793	-	P	-	1A	-	F	-	S	XXVDC
1		2		3		4		5	6

1. 793 -- Basic series designation

2. P -- PCB terminal

3. 1A -- Single pole normally open
   1B -- Single pole normally closed
   1C -- Single pole double throw

4. Blank -- Standard type
   F -- Class F

5. Blank -- Flux tight
   S -- Sealed type washable

6. XXVDC -- Coil voltage (please refer to the coil rating data for the availability)

Contact Rating

Resistive load	16A 240VAC

Coil Rating (DC)

◆ Standard Type

Rated voltage (V)	Rated current ±10 % at 23ºC (mA)	Coil resistance ±10 % at 23ºC (Ω)	Max. continuous voltage at 70ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
3	234	12.8	160 % of rated voltage	75 % of rated voltage	10 % of rated voltage	approx. 0.7W
5	139	36				
6	118	51				
9	78	116				
12	58	206				
18	39	463				
24	29	825				
48	15	3,300				
60	11.7	5,100				
100	7.5	13,400				

◆ High Sensitive Type

Rated voltage (V)	Rated current ±10 % at 23ºC (mA)	Coil resistance ±10 % at 23ºC (Ω)	Max. continuous voltage at 70ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
3	176	17	170 % of rated voltage	75 % of rated voltage	10 % of rated voltage	approx. 0.53W
5	105	47.7				
6	88	68				
9	60	150				
12	44	275				
18	29	618				
24	22	1,100				
48	11	4,400				
60	8.8	6,800				

793

Specification

Contact material	AgSnO alloy	
Contact resistance(1)	100mΩ Max.	
Operate time(1)	20ms Max.	
Release time(1)	10ms Max.	
Insulation resistance(1)	1000MΩ Min. (DC 500V)	
Dielectric strength(1)	Between open contact : AC 1000V , 50/60Hz 1 min.	
	Between contact and coil : AC 4000V , 50/60Hz 1 min. (for 1B,1C) : AC 5000V , 50/60Hz 1 min. (for 1A)	
Vibration resistance	Operating extremes	10~55Hz , amplitude 1.5 mm
	Damage limits	10~55Hz , amplitude 1.5 mm
Shock resistance	Operating extremes	10G
	Damage limits	100G
Life expectancy	Mechanical	10,000,000 operations (frequency 18,000 operations/hr)
	Electrical	100,000operations (frequency 1,800 operations/hr)
Operating ambient temperature	-40~+70ºC (no freezing)	
Weight	Approx. 17 g	

Note: (1) initial value

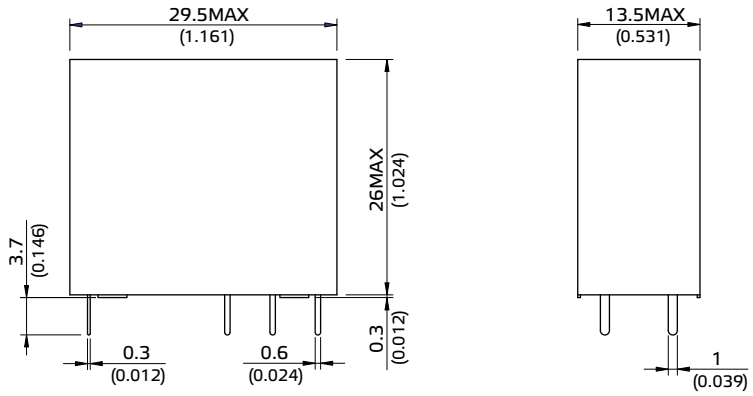
Safety Approval

Certified	UL	CSA	TUV
File No.	E88991	1616947	R50056914

Safety Approval Rating

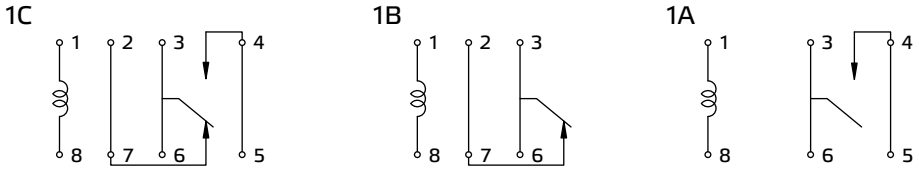
UL 、CSA		TUV
NO	NC	
20A 277VAC 25A 125VAC TV-10 20A 30VDC 1/2HP 250/125VAC 8A FLA, 250VAC	16A 250VAC 25A 125VAC 16A 30VDC 1/2HP 250/125VAC 8A FLA, 250VAC	16A 250VAC 6A 125VAC cos ϕ 0.5 16A 30VDC 8A 250VAC cos ϕ 0.4

Outline Dimensions



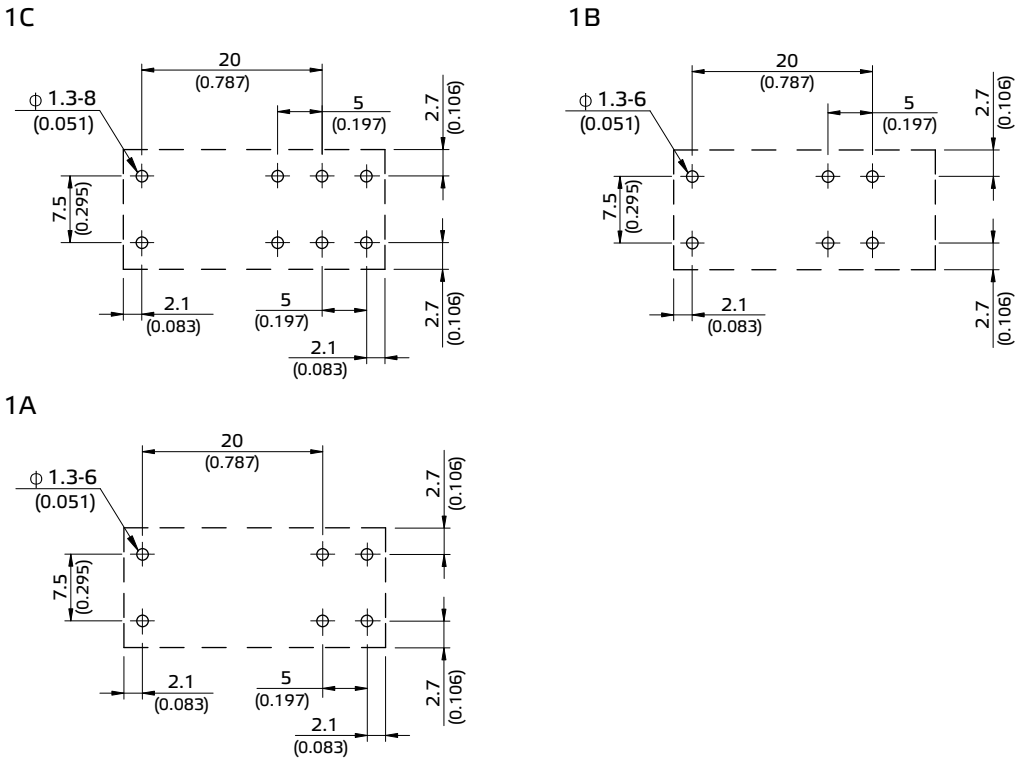
Wiring Diagram

BOTTOM VIEW



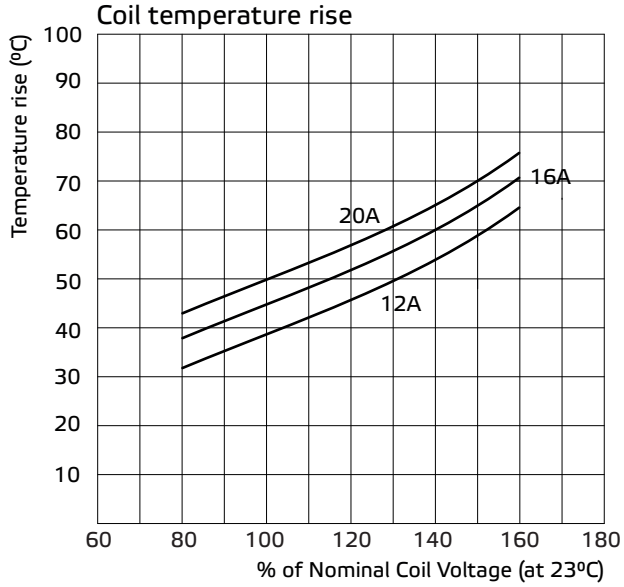
PC Board Layout

BOTTOM VIEW

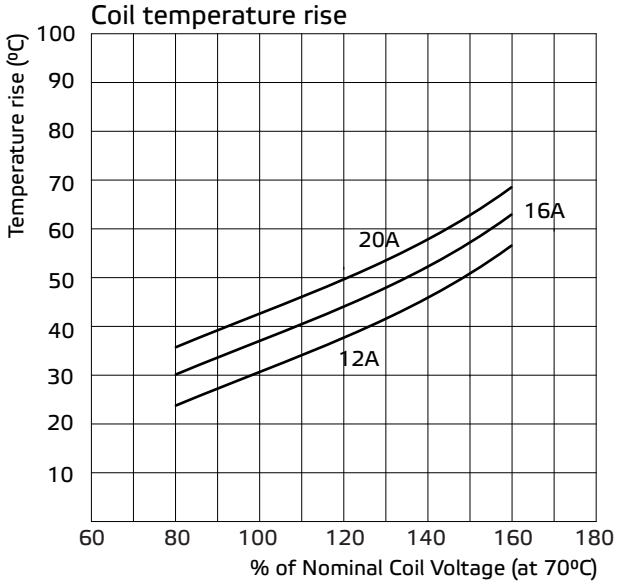


Engineering Data

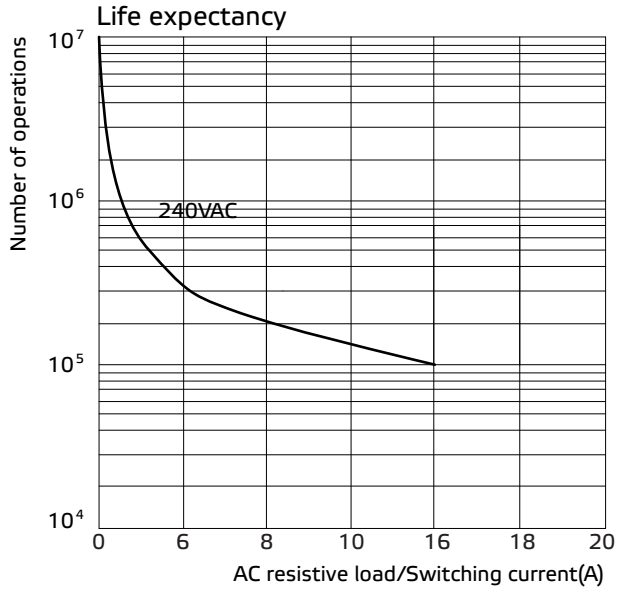
Coil temperature rise



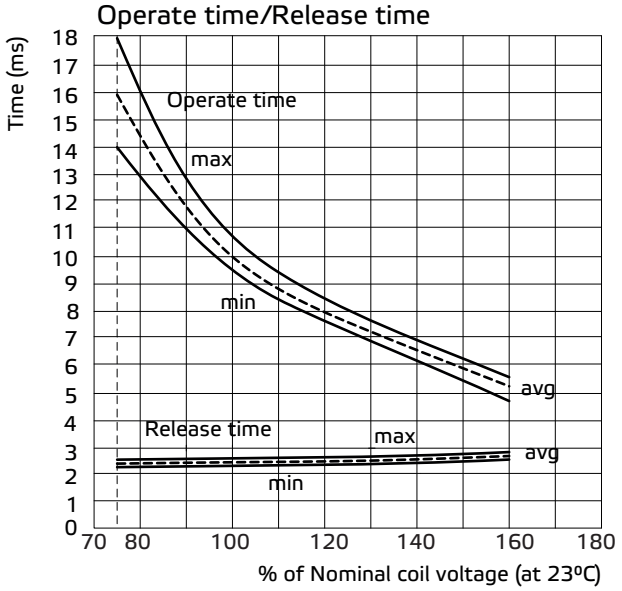
Coil temperature rise



Life expectancy



Operate time/Release time



202

Features

- Low cost miniature PCB Power Relays slim type 7mm width.
- 5A 250VAC suitable for PLC and heating element controls.
- High sensitive coil 200mW, 10KV impulse surge.
- SPST-NOcadmium free contacts.
- Optional for sealed flux free and sealed washable versions.
- High CTI 250 material & new Glow Wire test approved (E-Version)
- Comply with RoHS-Directive 2011/65/EU

Type List

◆ Standard Type

Terminal style	Contact form	UL Insulation system approval	Designation (provided with)	
			Flux tight	Sealed type washable
PCB terminal	1A (SPNO)	---------	202-1AC-C	202-1AC-S
		F	202-1AC-F-C	202-1AC-F-S
		---------	202-1AH-C	202-1AH-S
		F	202-1AH-F-C	202-1AH-F-S

◆ High Power Type

PCB terminal	1A (SPNO)	----------	202H-1AC-C	202H-1AC-S
		F	202H-1AC-F-C	202H-1AC-F-S
		----------	202H-1AH-C	202H-1AH-S
		F	202H-1AH-F-C	202H-1AH-F-S

◆ High Sensitive Type

PCB terminal	1A (SPNO)	----------	202N-1AC-C	202N-1AC-S
		F	202N-1AC-F-C	202N-1AC-F-S
		----------	202N-1AH-C	202N-1AH-S
		F	202N-1AH-F-C	202N-1AH-S

Ordering Information

202	H	N	-	1A	H	-	F	-	C	E	XXVDC
1	2	3		4	5		6		7	8	9

1. 202 -- Basic series designation

2. Blank -- Standard type
   H -- High power type

3. Blank -- Standard type (360mW)
   N -- High sensitive type (200mW) (only for 202 type)

4. 1A -- Single pole normally open

5. C -- Contact material AgNi
   CA -- Contact material AgNi + Au
   H -- Contact material AgSnO
   HA -- Contact material AgSnO + Au

6. Blank -- Standard type
   F -- Class F

7. C -- Flux tight
   S -- Sealed type washable

8. Blank -- Standard type
   E -- CTI 250

9. XXVDC -- Coil voltage (please refer to the coil rating data for the availability)

Contact Rating

Type	202N	202	202H
Rated load	3A 240VAC	5A 240VAC/30VDC	7A 240VAC/30VDC
Max. switch voltage	277VAC	277VAC、30VDC	277VAC、30VDC
Max. switch current	3A	5A	7A

Coil Rating (DC)

◆ Standand Type

Rated voltage (V)	Rated current ±10 % at 23ºC (mA)	Coil resistance ±10 % at 23ºC (Ω)	Max.continuous voltage at 70ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
5	72	69.4	160 % of rated voltage	75 % of rated voltage	5 % of rated voltage	approx. 0.36W
6	60	100				
9	40	225				
12	30	400				
18	20	900				
24	15	1600				

◆ High Sensitive Type

Rated voltage (V)	Rated current ±10 % at 23ºC (mA)	Coil resistance ±10 % at 23ºC (Ω)	Max.continuous voltage at 70ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
5	40	125	170 % of rated voltage	75 % of rated voltage	75 % of rated voltage	approx. 0.2W
6	33.3	180				
9	22.5	405				
12	16.7	720				
18	11.1	1620				
24	8.6	2880				

Specification

Contact material	AgNi / AgSnO alloy	
Contact resistance (1)	100mΩ Max.	
Operate time (1)	10 ms Max.	
Release time (1)	10 ms Max.	
Insulation resistance (1)	1000MΩ Min. (DC 500V)	
Dielectric strength (1)	Between open contact : AC 750V , 50/60Hz 1 min.	
	Between contact and coil : AC 4000V , 50/60Hz 1 min.	
Vibration resistance	Operating extremes	10~55Hz , amplitude 1.5 mm
	Damage limits	10~55Hz , amplitude 1.5 mm
Shock resistance	Operating extremes	10G
	Damage limits	100G
Life expectancy	Mechanical	5,000,000 operations (frequency 18,000 operations/hr)
	Electrical	100,000 operations (frequency 900 operations/hr)
	-40 ~ +70ºC (no freezing)(2)	
Weight	Approx. 4 g	

Note: (1) initial value (2) -40 ~ -85ºC is available

Safety Approval

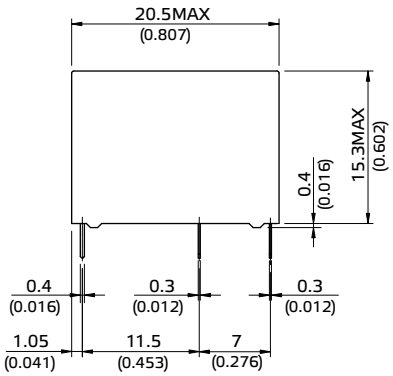
Certified	UL / CUL	VDE
File No.	E74321	40008369

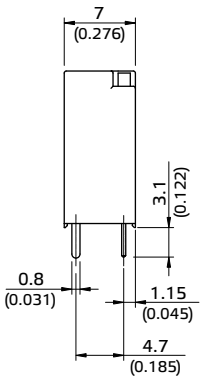
Safety Approval Rating

UL / CUL		VDE	
202、202N	202H	202、202N	202H
5A 277VAC 5A 30VDC	7A 277VAC 7A 30VDC TV-3 (H contact only)	5A 250VAC T85	7A 250VAC T70

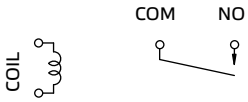
202

Outline Dimensions

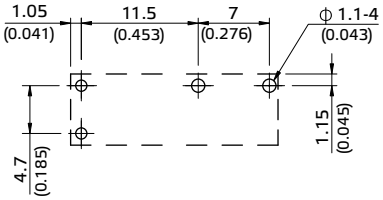




Wiring Diagram
BOTTOM VIEW

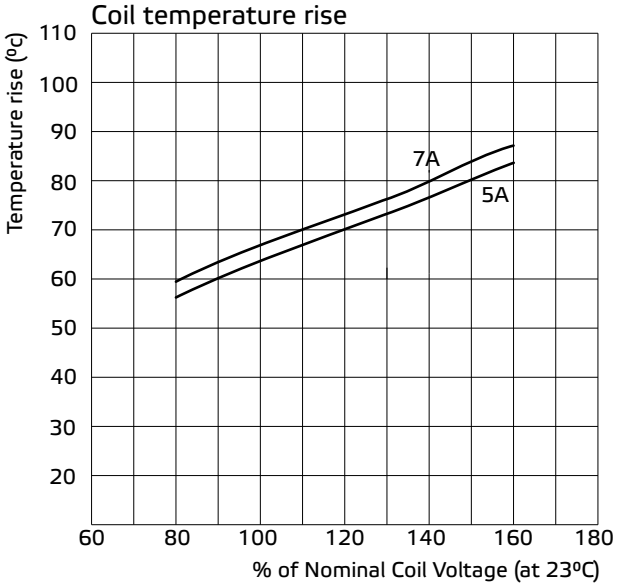


PC Board Layout
BOTTOM VIEW

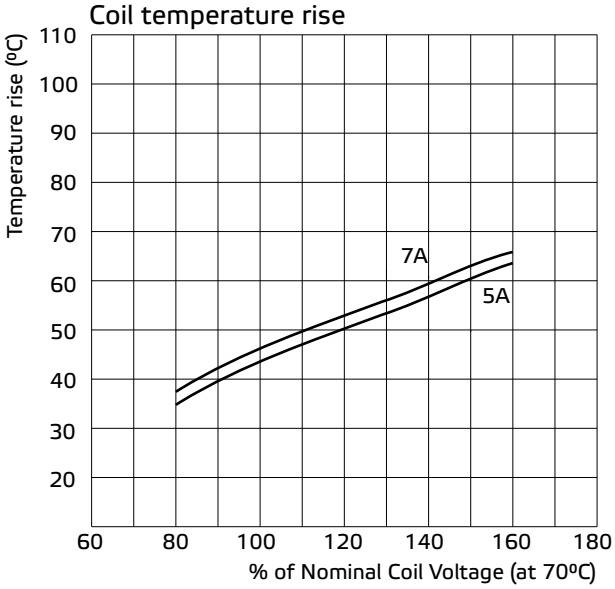


Engineering Data

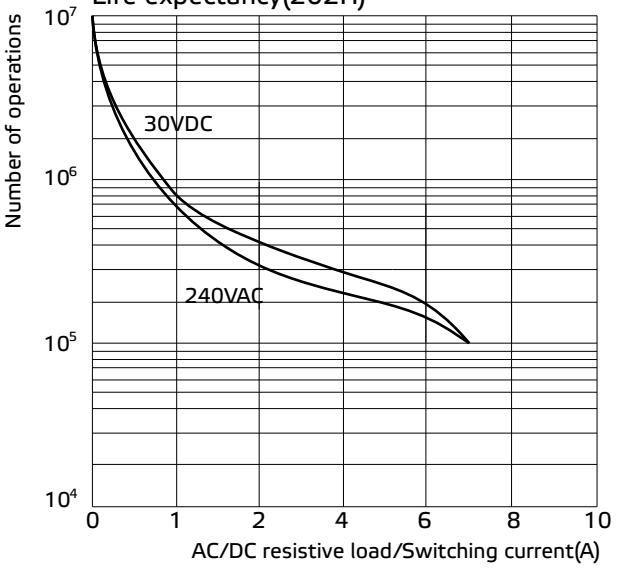
Coil temperature rise



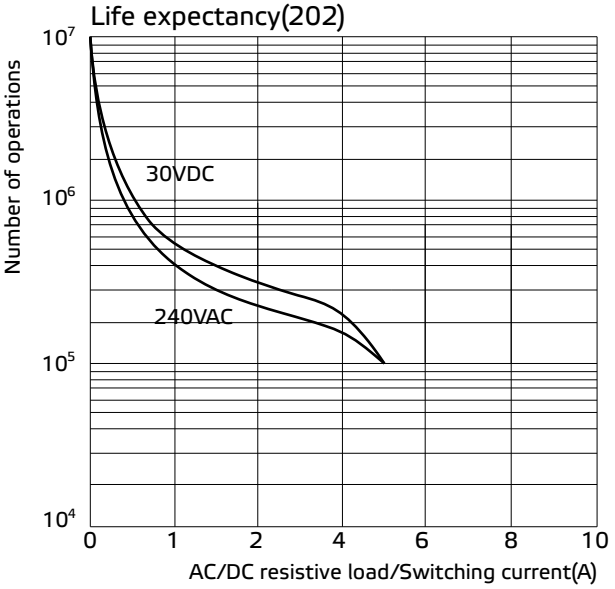
Coil temperature rise



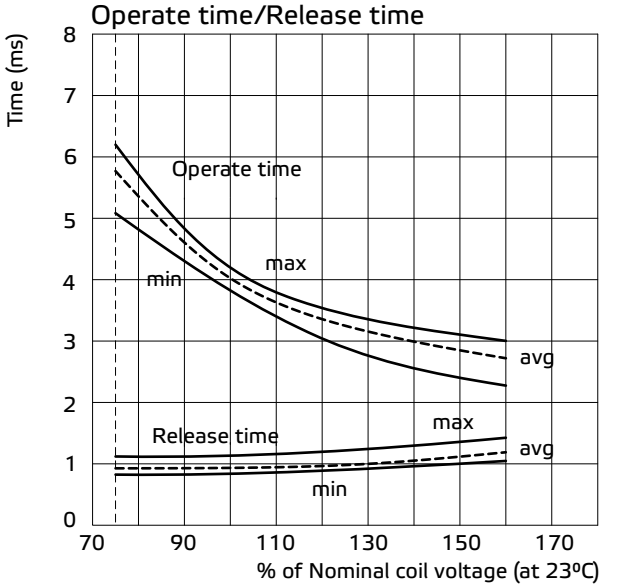
Life expectancy(202H)



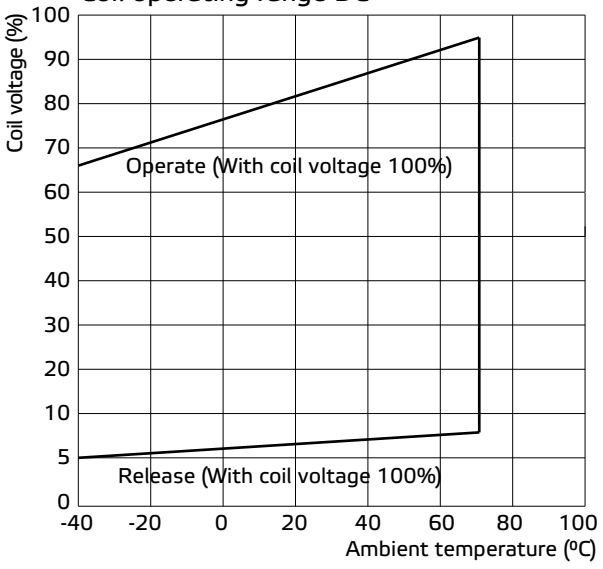
Life expectancy(202)



Operate time/Release time



Coil operating range DC



892

Features

- 10mm slim miniature PCB Power Relay.
- UL/CUL、CSA/CUS 、TUV 、VDE approved.
- High CTI 250 material (VDE and E version).
- High sensitive：200 mW & 400mW.
- High surge voltage：3,000 V between contacts and coil.
- Comply with RoHS-Directive 2011/65/EU.

Type List

◆ Standard Type

Terminal style	Contact form	UL Insulation system approval	Flux tight	Sealed type washable
PCB terminal	1A (SPNO)	---------	892-1AC-C	892-1AC-S
		F	892-1AC-F-C	892-1AC-F-S
		---------	892-1AH-C	892-1AH-S
		F	892-1AH-F-C	892-1AH-F-S
	1C (SPDT)	---------	892-1CC-C	892-1CC-S
		F	892-1CC-F-C	892-1CC-F-S
		---------	892-1CH-C	892-1CH-S
		F	892-1CH-F-C	892-1CH-F-S

◆ High Power Type

PCB terminal	1A (SPNO)	---------	892H-1AC-C	892H-1AC-S
		F	892H-1AC-F-C	892H-1AC-F-S
		---------	892H-1AH-C	892H-1AH-S
		F	892H-1AH-F-C	892H-1AH-F-S
	1C (SPDT)	---------	892H-1CC-C	892H-1CC-S
		F	892H-1CC-F-C	892H-1CC-F-S
		---------	892H-1CH-C	892H-1CH-S
		F	892H-1CH-F-C	892H-1CH-F-S

◆ High Sensitive Type

PCB terminal	1A (SPNO)	---------	892N-1AC-C	892N-1AC-S
		F	892N-1AC-F-C	892N-1AC-F-S
		---------	892N-1AH-C	892N-1AH-S
		F	892N-1AH-F-C	892N-1AH-F-S
	1C (SPDT)	---------	892N-1CC-C	892N-1CC-S
		F	892N-1CC-F-C	892N-1CC-F-S
		---------	892N-1CH-C	892N-1CH-S
		F	892N-1CH-F-C	892N-1CH-F-S

Ordering Information

892 H N - 1AC - F - C E XXVDC
1 2 3 4 5 6 7 8

1. 892 -- Basic series designation

2. Blank -- Standard type
   H -- High power type

3. Blank -- Standard type
   N -- High sensitive type

4. 1AC -- Single pole normally open ` Contact material AgNi
   1BC -- Single pole normally closed ` Contact material AgNi
   1CC -- Single pole double throw ` Contact material AgNi
   1AH -- Single pole normally open ` Contact material AgSnO
   1BH -- Single pole normally close、Contact material AgSnO
   1CH -- Single pole double throw 、Contact material AgSnO

5. Blank -- Standard type
   F -- Class F

6. C -- Flux tight
   S -- Sealed type washable

7. Blank -- Standard type
   E -- CTI 250V

8. XXVDC -- Coil voltage (please refer to the coil rating data for the availability).

Contact Rating

Type	892	892H
Resistive load	NO / NC : 5A/3A 240VAC NO / NC : 7A/3A 120VAC	NO / NC : 10A/5A 120VAC (50,000 ops.) NO / NC : 7A/5A 240VAC
Max. switching current	NO / NC : 7A/3A	NO / NC : 10A/5A
Max. switching voltage	277VAC	277VAC
Max. switching capacity	NO / NC : 1200VA/720VA	NO / NC : 1680VA/1200VA

Coil Rating (DC)

◆ Standard Type

Rated voltage (V)	Rated current ±10 % at 23ºC (mA)	Coil resistance ±10 % at 23ºC (Ω)	Max.continuous voltage at 85ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
3	133.3	22.5	160 % of rated voltage	80 % of rated voltage (H type only) 75 % of rated voltage	5 % of rated voltage	approx. 0.4W
5	80	62.5				
6	66.7	90				
9	44.4	202.5				
12	33.3	360				
18	22.2	810				
24	16.7	1440				
36	11.1	3240				
48	8.3	5760				
60	6.7	9000				

◆High Sensitivity Type

Rated voltage (V)	Rated current ±10 % at 23ºC (mA)	Coil resistance ±10 % at 23ºC (Ω)	Max. continuous voltage at 85ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
3	66.7	45	170 % of rated voltage	80 % of rated voltage (HN type or 1C type only) 75 % of rated voltage	5 % of rated voltage	approx. 0.2W
5	40.0	125				
6	33.3	180				
9	22.2	405				
12	16.7	720				
18	11.1	1620				
24	8.3	2880				
36	5.6	6480				

Specification

Contact material	AgNi / AgSnO alloy	
Contact resistance(1)	100mΩ Max.	
Operate time(1)	10ms Max.	
Release time(1)	5ms Max.	
Insulation resistance(1)	1000MΩ Min. (DC 500V)	
Dielectric strength(1)	Between open contact : AC 1000V , 50/60Hz 1 min.	
	Between contact and coil : AC 4000V , 50/60Hz 1 min.	
Vibration resistance	Operating extremes	10~55Hz , amplitude 1.5 mm
	Damage limit	10~55Hz , amplitude 1.5 mm
Shock resistance	Operating extremes	30G
	Damage limits	100G
Life expectancy	Mechanical	10,000,000 operations (frequency 18,000 operations/hr)
	Electrical	100,000 operations (frequency 900 operations/hr)
Operating ambient temperature	-40ºC~+85ºC (no freezing)	
Weight	Approx. 8g	

Note: (1) initial value

Safety Approval

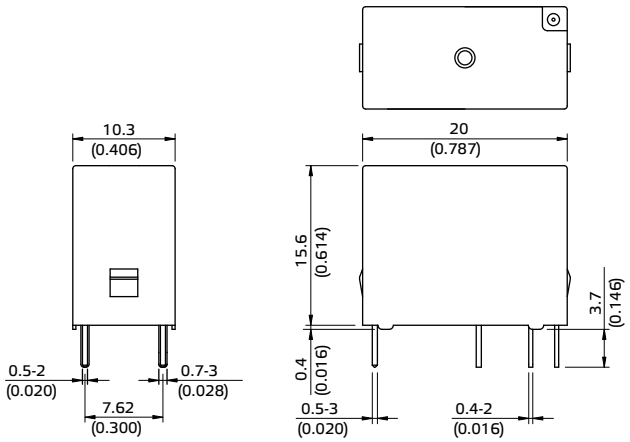
Certified	CSA / CUS	TUV	VDE	UL / CUL
File No.	1245129	R 50006512	40006318	E88991

892

Safety Approval Rating

CSA / CUS		TUV	
892	892H	892	892H
NO：7A 125VAC 5A 277VAC NC：3A 125VAC 3A 277VAC	NO：10A 125VAC 7A 277VAC TV-3 NC：5A 125VAC 5A 277VAC	NO：7A 120VAC 5A 240VAC NC：3A 120VAC 3A 240VAC	NO：10A 120VAC 7A 240VAC NC：5A 120VAC 5A 240VAC
VDE		**UL /CUL**	
892	892H	892	892H
NO：5A 250VAC T85 NC：3A 250VAC T85	NO：7A 250VAC T85 NC：5A 250VAC T85	NO：7A 125VAC 5A 277VAC 1/10HP 125VAC 1/6HP 277VAC NC：3A 125VAC 3A 277VAC	NO：10A 125VAC 7A 277VAC NC：5A 125VAC 5A 125VAC NO/NC：4FLA/4LRA 120VAC

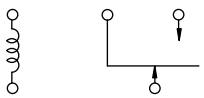
Outline Dimensions



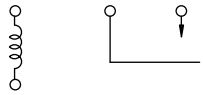
Wiring Diagram

BOTTOM VIEW

1C

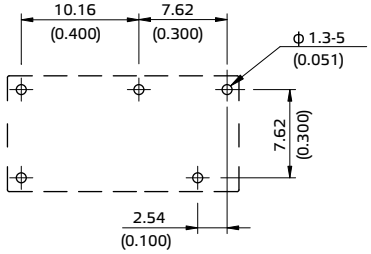


1A



PC Board Layout

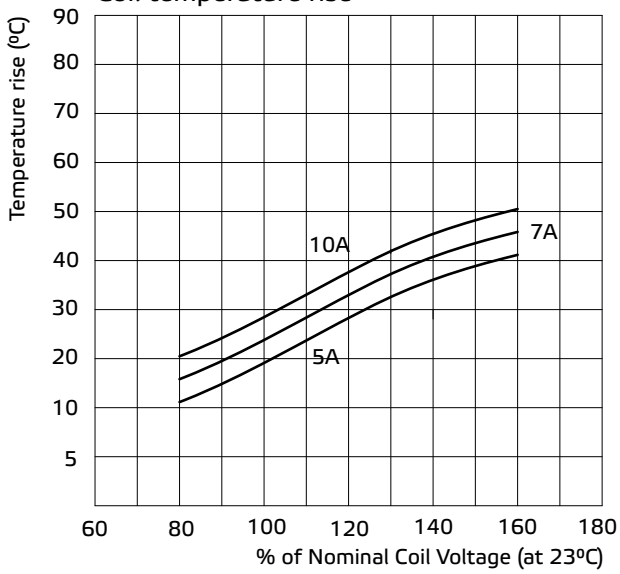
BOTTOM VIEW



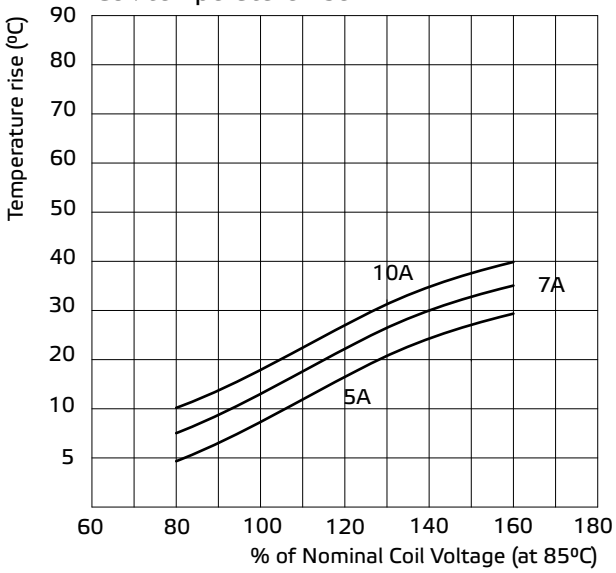
892

Engineering Data

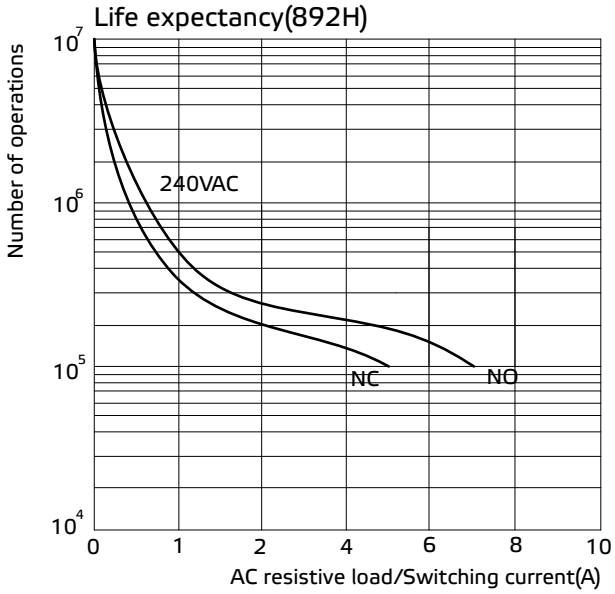
Coil temperature rise



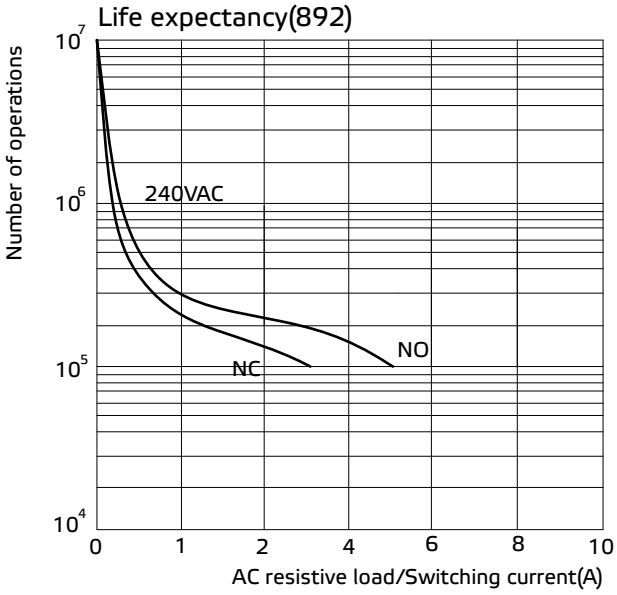
Coil temperature rise



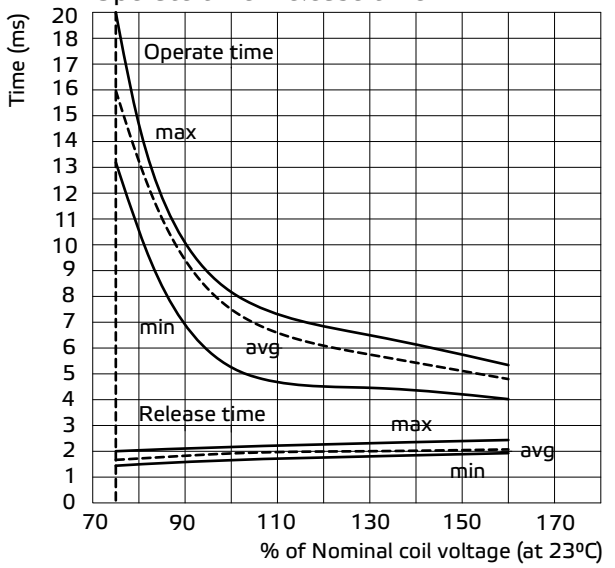
Life expectancy(892H)



Life expectancy(892)



Operate time/Release time



202HT

Features

- Slim PCB Miniature Power Relay.
- Designed for high rating 10A and 105ºC high. temperature applications.
- Optional for Flux-tight and sealed version.
- High CTI 250 material & new Glow Wire test approved (E-Version)
- Comply with RoHS-Directive 2011/65/EU.

Type List

Terminal style	Contact form	UL Insulation system approval	Designation (provided with)	
			Flux tight	Sealed type washable
PCB terminal	1A (SPNO)	F	202HT-1AC-F-C	202HT-1AC-F-S

Ordering Information

202	H	T	-	1A	C	-	F	-	C	E	XXVDC
1	2	3		4	5		6		7	8	9

1. 202 -- Basic series designation
2. H -- High power type
3. T -- High temperature type
4. 1A -- Single pole normally open
5. C -- Contact material AgNi
6. F -- Class F
7. C -- Flux tight
   S -- Sealed type washable
8. Blank -- standard type
   E -- CTI 250
9. XXVDC -- Coil voltage (please refer to the coil rating data for the availability)

Contact Rating

Rated load	10A 240VAC
Max. switch voltage	277VAC
Max. switch current	10A

Coil Rating (DC)

Rated voltage (V)	Rated current ±10% at 23ºC (mA)	Coil resistance ±10% at 23ºC (Ω)	Max. continuous voltage at 85ºC	Pick up voltage (Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
5	72	69.4	130 % of rated voltage	75 % of rated voltage	5 % of rated voltage	approx. 0.36W
6	60	100				
9	40	225				
12	30	400				
18	20	900				
24	15	1600				

202HT

Specification

Contact material	AgNi alloy	
Contact resistance(1)	100 mΩ Max.	
Operate time (1)	10 ms Max.	
Release time(1)	10 ms Max.	
Insulation resistance(1)	1000 MΩ Min. (DC 500V)	
Dielectric strength(1)	Between open contact : AC 750V, 50/60Hz 1 min.	
	Between contact and coil : AC 4000V, 50/60Hz 1 min.	
Vibration resistance	Operating extremes	10~55Hz , amplitude 1.5 mm
	Damage limits	10~55Hz , amplitude 1.5 mm
Shock resistance	Operating extremes	10G
	Damage limits	100G
Life expectancy	Mechanical	5,000,000 operations (frequency 18,000 operations/hr)
	Electrical	100,000 operations (frequency 900 operations/hr)
Operating ambient temperature	-40~+105℃ (no freezing)	
Weight	Approx. 4 g	

Note : (1) initial value

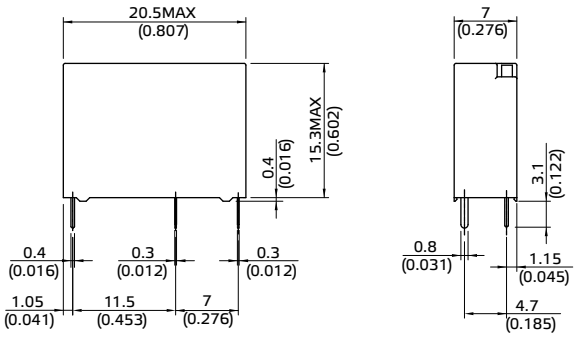
Safety Approval

Certified	UL / CUL	VDE
File No.	E74321	40008369

Safety Approval Rating

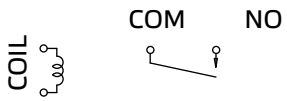
UL / CUL	VDE
10A 277VAC	10A 250VAC T85 7A 250VAC T105

Outline Dimensions



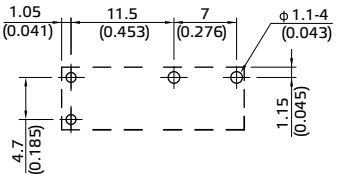
Wiring Diagram

BOTTOM VIEW



PC Board Layout

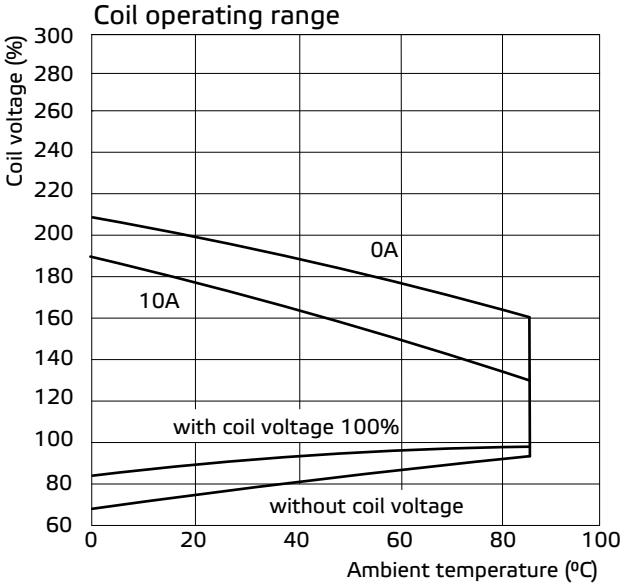
BOTTOM VIEW



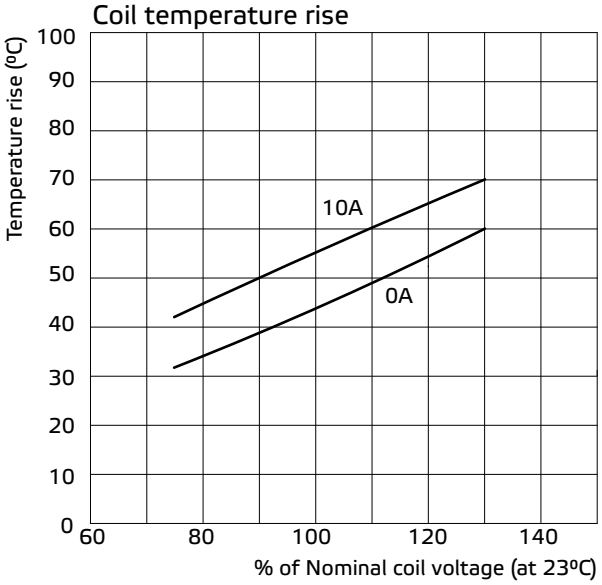
202HT

Engineering Data

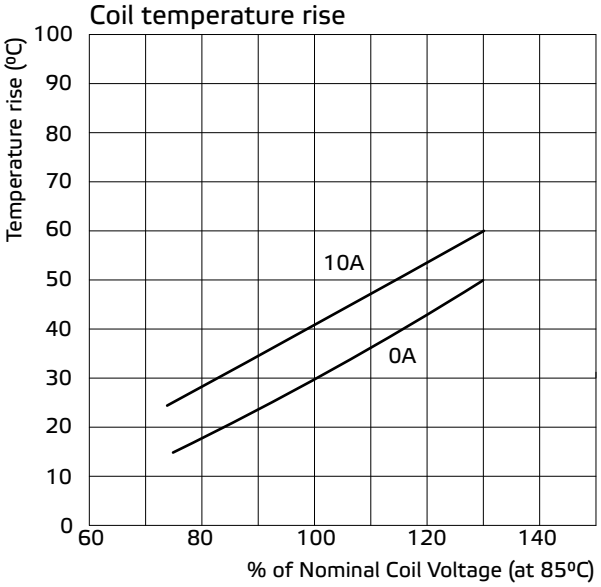
Coil operating range



Coil temperature rise



Coil temperature rise



302

Features

- 20A miniature PCB Power Relay.
- 1 form A contact configuration with quick terminal type.
- 5KV dielectric strength, 10K surge voltage between coils to contact.
- Ideal for high rating Home Appliances of heating element control.
- Comply with RoHS-Directive 2011/65/EU
- Relay with AgCdO contact material do not comply with the Directives.

Type List

◆Standard Type

Terminal style	Contact form	UL Insulation system approval	Designation (provided with) Flux tight
P (PCB terminal)	1A (SPNO)	----------	302P-1AB-C
		----------	302P-1AH-C
		----------	302P-1AC-C
		F	302P-1AB-F-C
		F	302P-1AH-F-C
		F	302P-1AC-F-C
WP (PCB terminal & Quick terminal	1A (SPNO)	----------	302WP-1AB-C
		----------	302WP-1AH-C
		----------	302WP-1AC-C
		F	302WP-1AB-F-C
		F	302WP-1AH-F-C
		F	302WP-1AC-F-C
WP1 PCB terminals (2 coil terminals & 1 NO terminal) & Quick terminals	1A (SPNO)	----------	302WP1-1AB-C
		----------	302WP1-1AH-C
		----------	302WP1-1AC-C
		F	302WP1-1AB-F-C
		F	302WP1-1AH-F-C
		F	302WP1-1AC-F-C
WP2 PCB terminals (2 coil terminals & 2 stationary support terminals) & Quick terminals	1A (SPNO)	----------	302WP2-1AB-C
		----------	302WP2-1AH-C
		----------	302WP2-1AC-C
		F	302WP2-1AB-F-C
		F	302WP2-1AH-F-C
		F	302WP2-1AC-F-C

302

◆ High Sensitive Type

P (PCB terminal)	1A (SPNO)	---------	302NP-1AB-C
		---------	302NP-1AH-C
		---------	302NP-1AC-C
		F	302NP-1AB-F-C
		F	302NP-1AH-F-C
		F	302NP-1AC-F-C
WP (PCB terminal & Quick terminal)	1A (SPNO)	---------	302NWP-1AB-C
		---------	302NWP-1AH-C
		---------	302NWP-1AC-C
		F	302NWP-1AB-F-C
		F	302NWP-1AH-F-C
		F	302NWP-1AC-F-C
WP1 PCB terminals (2 coil terminals & 1 NO terminal) & Quick terminals	1A (SPNO)	---------	302NWP1-1AB-C
		---------	302NWP1-1AH-C
		---------	302NWP1-1AC-C
		F	302NWP1-1AB-F-C
		F	302NWP1-1AH-F-C
		F	302NWP1-1AC-F-C
WP2 PCB terminals (2 coil terminals & 2 stationary support terminals) & Quick terminals	1A (SPNO)	---------	302NWP2-1AB-C
		---------	302NWP2-1AH-C
		---------	302NWP2-1AC-C
		F	302NWP2-1AB-F-C
		F	302NWP2-1AH-F-C
		F	302NWP2-1AC-F-C

Ordering Information

302	N	WP	-	1A	H	-	F	-	C	XXVDC
1	2	3		4	5		6		7	8

1. 302 -- Basic series designation

2. Blank -- Standard type
   N -- High sensitive type

3. P -- PCB terminals
   WP -- PCB terminals and Quick terminals
   WP1 -- PCB terminals (2 coil terminals and 1 NO terminal) and Quick terminals
   WP2 -- PCB terminals (2 coil terminals and 2 stationary support terminals) and Quick terminals

4. 1A -- Single pole normally open

5. B -- Contact material AgCdO
   BA -- Contact material AgCdO + Au
   C -- Contact material AgNi
   CA -- Contact material AgNi + Au
   H -- Contact material AgSnO
   HA -- Contact material AgSnO + Au

6. Blank -- Standard type
   F -- Class F

7. C -- Flux tight

8. XXVDC -- Coil voltage (please refer to the coil rating data for the availability)

Contact Rating

Resistive load	17A 240VAC

Coil Rating (DC)

◆Standard Type

Rated voltage (V)	Rated current ±10 % at 23ºC (mA)	Coil resistance ±10 % at 23ºC (Ω)	Max. continuous voltage at 85ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
3	176	17	160 % of rated voltage	75 % of rated voltage	10 % of rated voltage	approx. 0.53W
5	106	47				
6	88	68				
9	59	153				
12	44	272				
15	35	425				
18	29	611				
21	25	832				
24	22	1,087				
36	15	2,445				
48	11	4,347				
60	8.8	6,792				
100	5.3	18,868				
110	4.8	22,830				

◆High Sensitive Type

Rated voltage (V)	Rated current ±10 % at 23ºC (mA)	Coil resistance ±10 % at 23ºC (Ω)	Max. continuous voltage at 85ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
3	133	22.5	160 % of rated voltage	75 % of rated voltage	10 % of rated voltage	approx. 0.4W
5	80	62.5				
6	67	90				
9	44	202.5				
12	33	360				
15	27	563				
18	22	810				
21	19	1,103				
24	17	1,440				
36	11	3,240				
48	8.3	5,760				
60	6.7	9,000				
100	4.0	25,000				
110	3.6	30,250				

302

Specification

Contact material	AgSnO / AgNi / AgCdO alloy	
Contact resistance(1)	50mΩ Max.	
Operate time(1)	20ms Max.	
Release time(1)	10ms Max.	
Insulation resistance(1)	1000MΩ Min. (DC 500V)	
Dielectric strength(1)	Between open contact : AC 1000V , 50/60Hz 1 min.	
	Between contact and coil : AC 5000V , 50/60Hz 1 min.	
Vibration resistance	Operating extremes	10~55Hz , amplitude 1.5 mm
	Damage limits	10~55Hz , amplitude 1.5 mm
Shock resistance	Operating extremes	10G
	Damage limits	100G
Life expectancy	Mechanical	10,000,000 operations (frequency 18,000 operations/hr)
	Electrical	100,000 operations (frequency 1,800 operations/hr)
Operating ambient temp.	-40~+85ºC (no freezing)	
Weight	Approx. 17 g	

Note : (1) initial value

Safety Approval

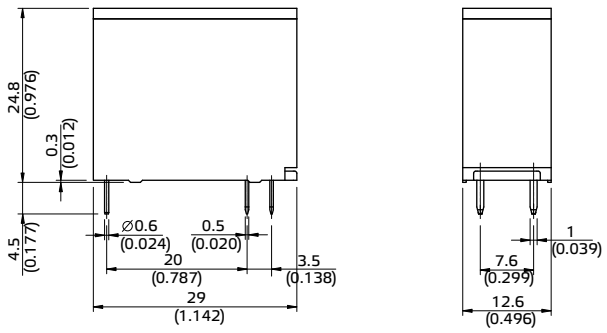
Certified	UL / CUL	TUV
File No.	E88991	R 50025929

Safety Approval Rating

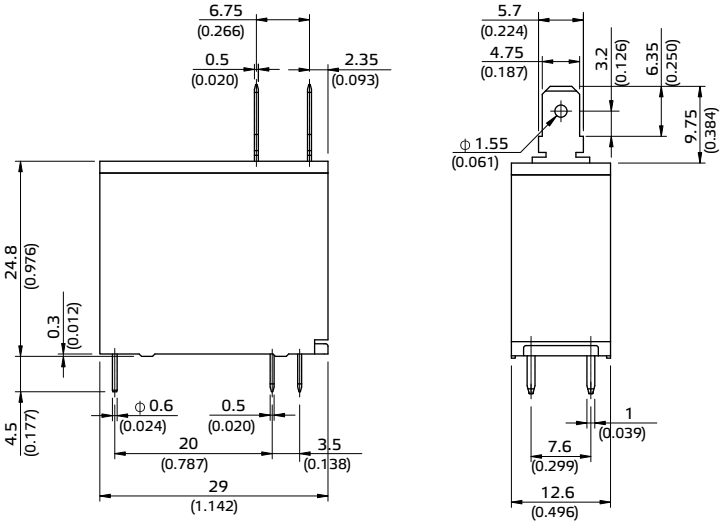
UL / CUL		TUV
B、BA / C、CA	H、HA	
20A 277VAC 1 1/2HP 250VAC 1HP 125VAC	20A 277VAC 1 1/2HP250VAC 8A 120VAC Tungsten	17A 250VAC 20A 250VAC 12A 250VAC cosϕ0.4

Outline Dimensions

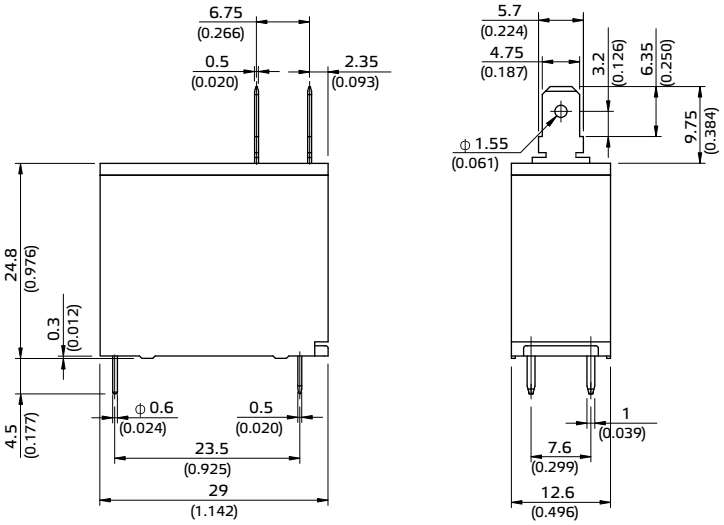
◆302P



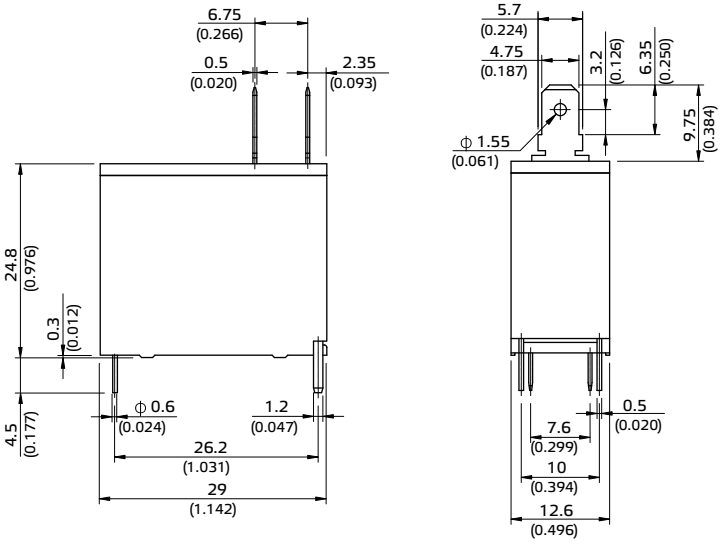
◆302WP



◆302WP1



◆302WP2

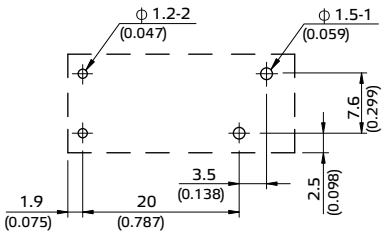


302

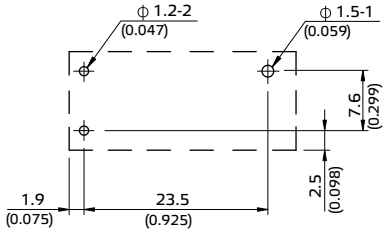
Wiring Diagram
BOTTOM VIEW

PC Board Layout
BOTTOM VIEW

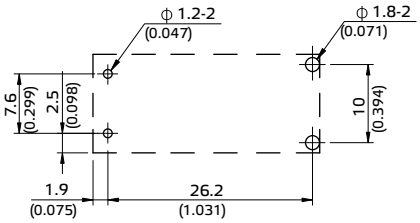
◆302P, 302WP



◆302WP1

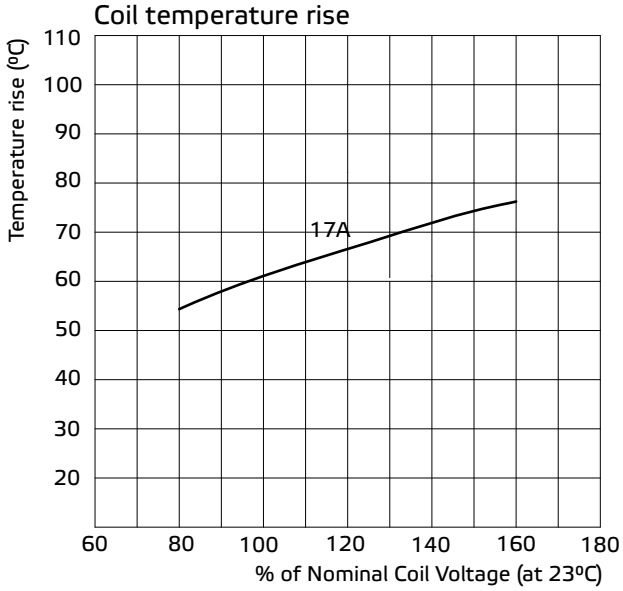


◆302WP2

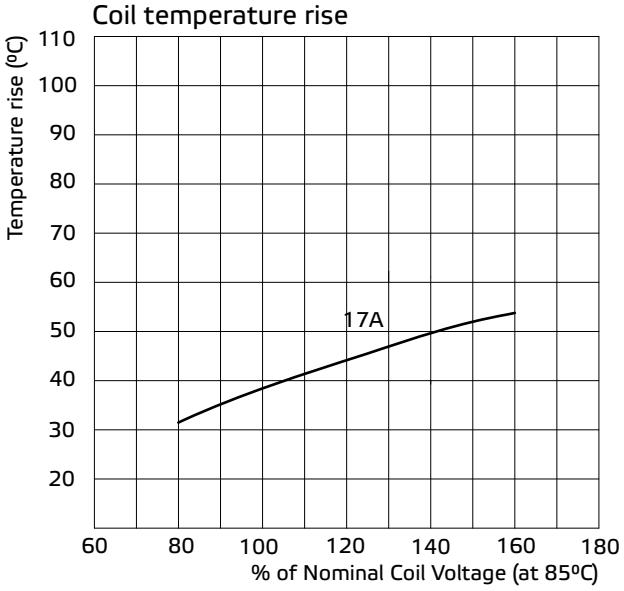


Engineering Data

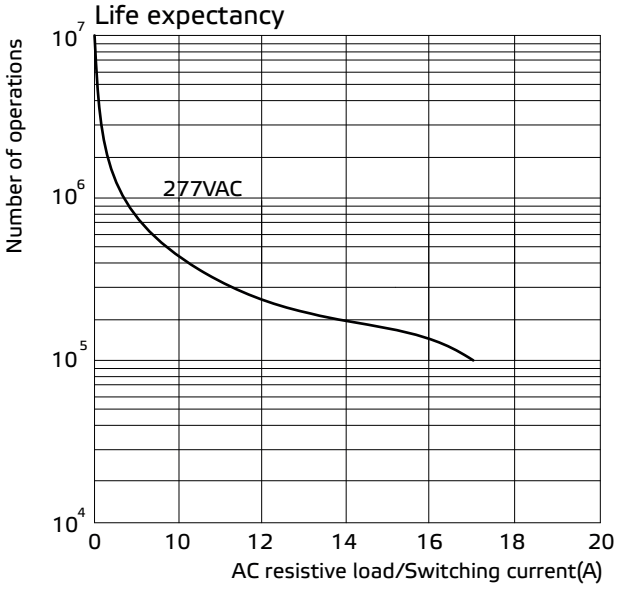
Coil temperature rise



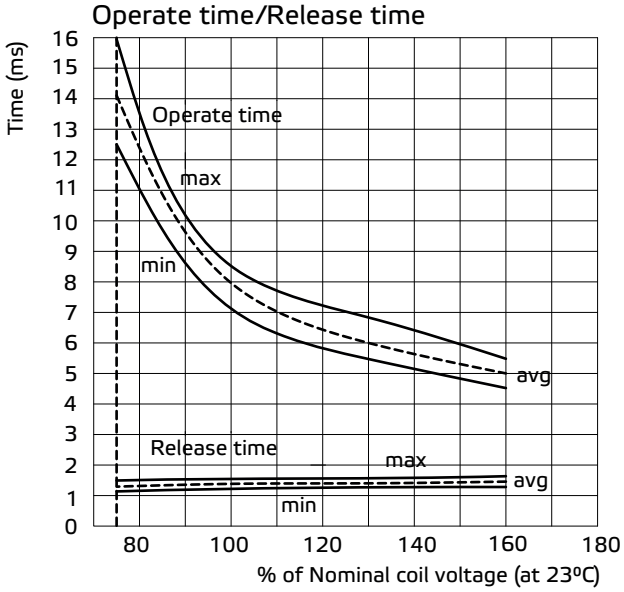
Coil temperature rise



Life expectancy



Operate time/Release time



805

Features

- Optional for open frame, dust cover, sealed type and with/without quick terminal on top.
- High rating 20A 240VAC.
- Ideal for home appliances application, specially for heating control use.
- Comply with RoHS-Directive 2011/65/EU.

Type List

Terminal style	Contact form	Insulation system	Designation	
			Flux tight	Sealed type washable
PCB terminal	1A (SPNO)	----	805-1AC-C	805-1AC-S
			805-1AH-C	805-1AH-S
	1C (SPDT)	-----	805-1CC-C	805-1CC-S
			805-1CH-C	805-1CH-S
	1A (SPNO)	F	805-1AC-F-C	805-1AC-F-S
			805-1AH-F-C	805-1AH-F-S
	1C (SPDT)	F	805-1CC-F-C	805-1CC-F-S
			805-1CH-F-C	805-1CH-F-S
WP (PCB terminal & Quick terminal)	1A (SPNO)	----	805WP-1AC-C	805WP-1AC-S
			805WP-1AH-C	805WP-1AH-S
	1C (SPDT)	----	805WP-1CC-C	805WP-1CC-S
			805WP-1CH-C	805WP-1CH-S
	1A (SPNO)	F	805WP-1AC-F-C	805WP-1AC-F-S
			805WP-1AH-F-C	805WP-1AH-F-S
	1C (SPDT)	F	805WP-1CC-F-C	805WP-1CC-F-S
			805WP-1CH-F-C	805WP-1CH-F-S

Terminal style	Contact form	Insulation system	Designation	
			Flux tight (with shroud)	Sealed type washable (with shroud)
WP (PCB terminal & Quick terminal)	1A (SPNO)	----	805WP-1AC-CF	805WP-1AC-SF
			805WP-1AH-CF	805WP-1AH-SF
	1C (SPDT)	----	805WP-1CC-CF	805WP-1CC-SF
			805WP-1CH-CF	805WP-1CH-SF
	1A (SPNO)	F	805WP-1AC-F-CF	805WP-1AC-F-SF
			805WP-1AH-F-CF	805WP-1AH-F-SF
	1C (SPDT)	F	805WP-1CC-F-CF	805WP-1CC-F-SF
			805WP-1CH-F-CF	805WP-1CH-F-SF

Ordering Information

805	WP	-	1A	C	-	F	-	SF	-	B	XXVDC
1	2		3	4		5		6		7	8

1. 805 -- Basic series designation
2. Blank -- PCB terminal
   W -- Quick terminal (only for C1 cover)
   WP -- PCB terminal & Quick terminal
3. 1A -- Single pole normally open
   1C -- Single pole double throw
4. C -- Contact material AgNi
   H -- Contact material AgSnO

5. Blank -- Standard type
   F -- Class F

6. Blank -- Open type
   C -- Flux tight
   S -- Sealed washable
   CF -- Flux tight with shroud
   SF -- Sealed washable with shroud

   C1 -- With flanged cover
   S1 -- Sealed type washable with flanged cover

7. Blank -- Standard type
   B -- With insulation barrier

8. XXVDC -- Coil voltage (please refer to the coil rating data for the availability)

Contact Rating

Resistive load	20A 240VAC

Coil Rating (DC)

Rated voltage (V)	Rated current ±10 % at 23ºC (mA)	Coil resistance ±10 % at 23ºC (Ω)	Max. continuous voltage at 85ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
5	139	36	130 % of rated voltage	75 % of rated voltage	10 % of rated voltage	approx. 0.7W
6	118	51				
9	78	116				
12	58	206				
18	39	463				
24	29	823				
36	19	1,851				
48	15	3,291				
110	6	17,286				

Specification

Contact material	AgNi / AgSnO alloy	
Contact resistance (1)	50 mΩ Max.	
Operate time (1)	15 ms Max.	
Release time (1)	10 ms Max.	
Insulation resistance (1)	100 MΩ Min. (DC 500V)	
Surge voltage withstand	Between contact and coil : 6KV 1.2X50 μS	
Dielectric strength (1)	Between open contact : 1000Vrms 50/60Hz 1min.	
	Between contact and coil : 2500Vrms 50/60Hz 1min	
Vibration resistance	Operating extremes	10~55Hz , amplitude 1.5 mm
	Damage limits	10~55Hz , amplitude 1.5 mm
Shock resistance	Operating extremes	10G
	Damage limits	100G
Life expectancy	Mechanical	10,000,000 operations (frequency 18,000 operations/hr)
	Electrical	100,000 operations (for NO contact) (frequency 900 operations/hr)
Operating ambient temperature	-40 ~ +85ºC (no freezing)	
Weight	Approx. 22 g (open type), 27g (with cover), 36g (WP) , 38g (W)	

Note : (1) initial value

Safety Approval

Certified	UL / CUL
File No.	E88991

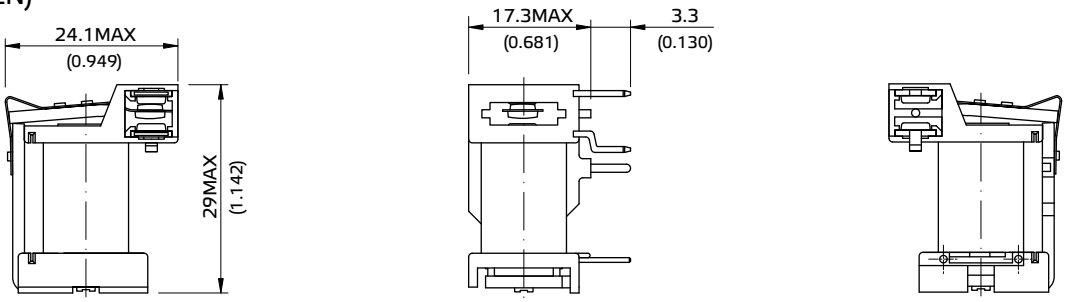
805

Safety Approval Rating

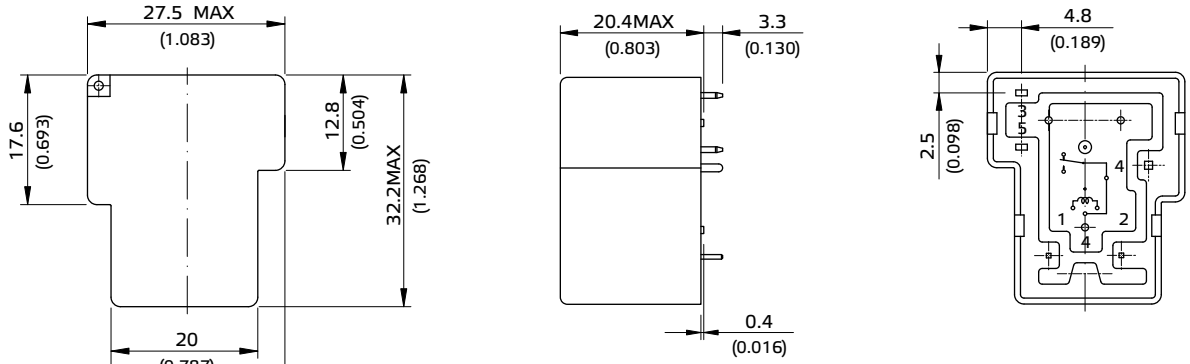
UL / CUL
30A 277VAC

Outline Dimensions

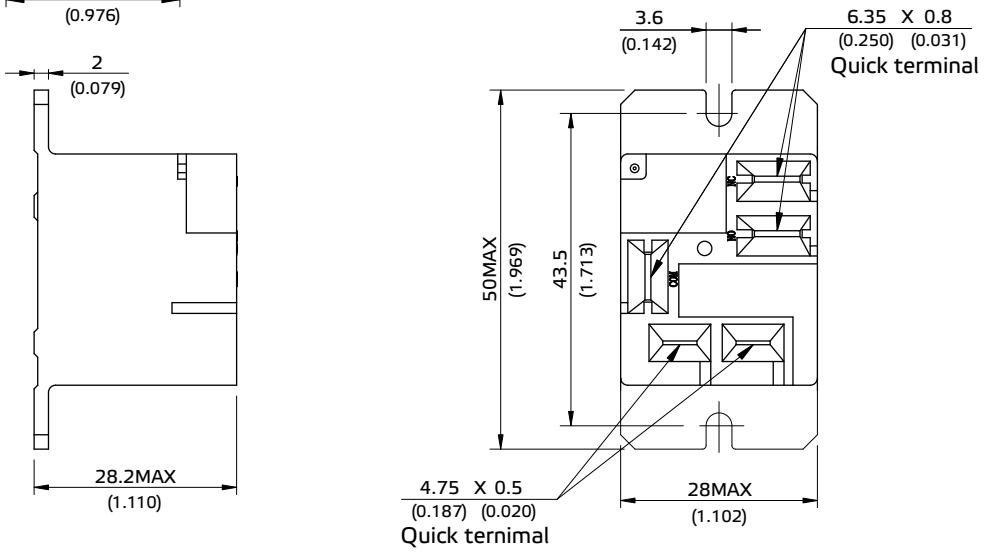
◆ 805 (OPEN)



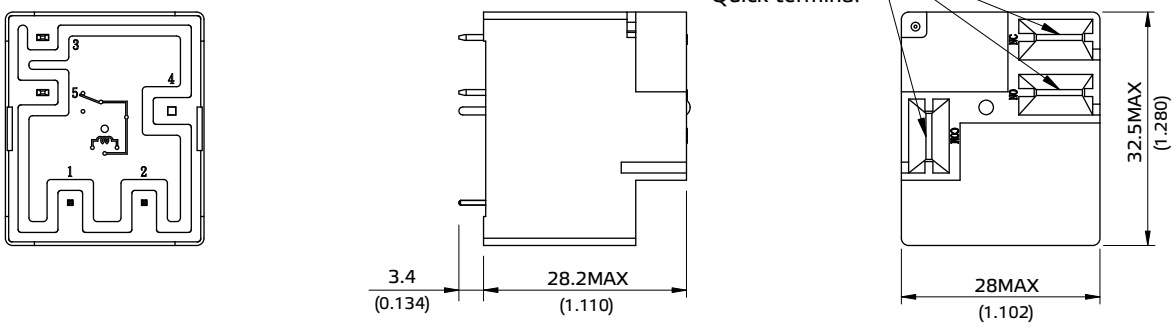
◆ 805 (-C,-V,-S)



◆ 805W

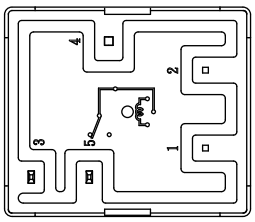


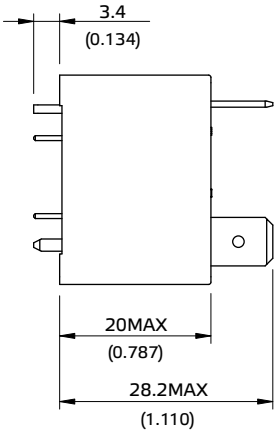
◆ 805WP (Cover with shroud)

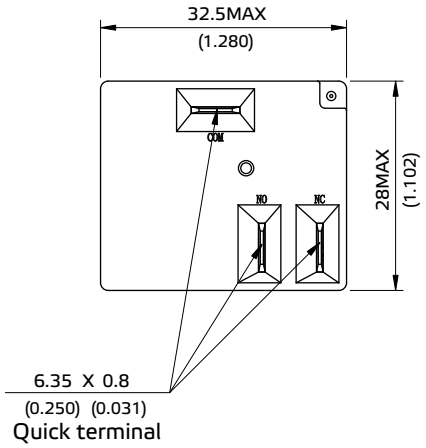


805

◆ 805WP

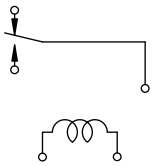




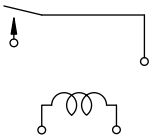


Wiring Diagram
BOTTOM VIEW

1C

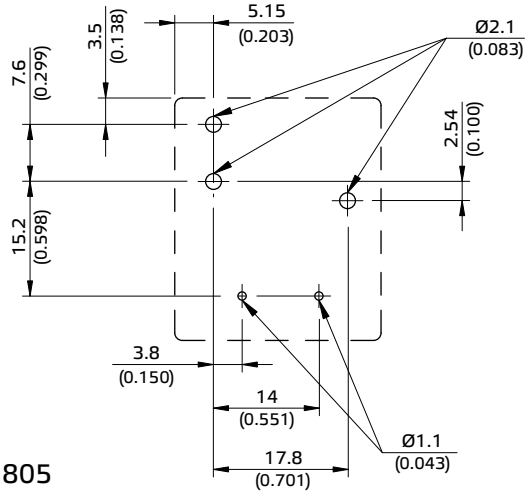


1A

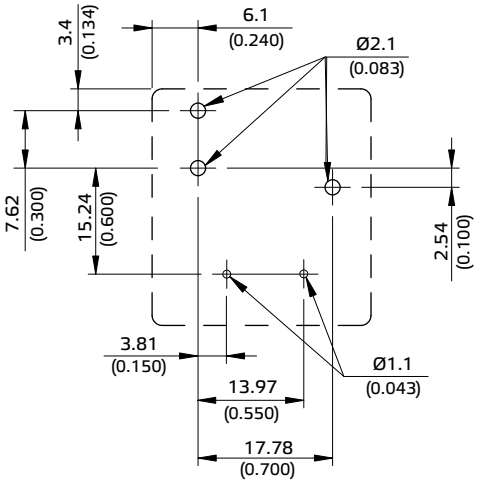


PC Board Layout
BOTTOM VIEW

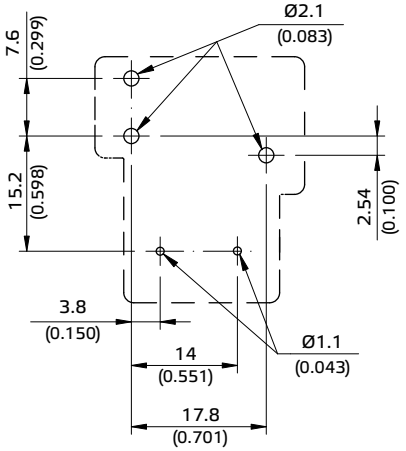
◆ 805WP



◆ 805WP (Cover with shroud)



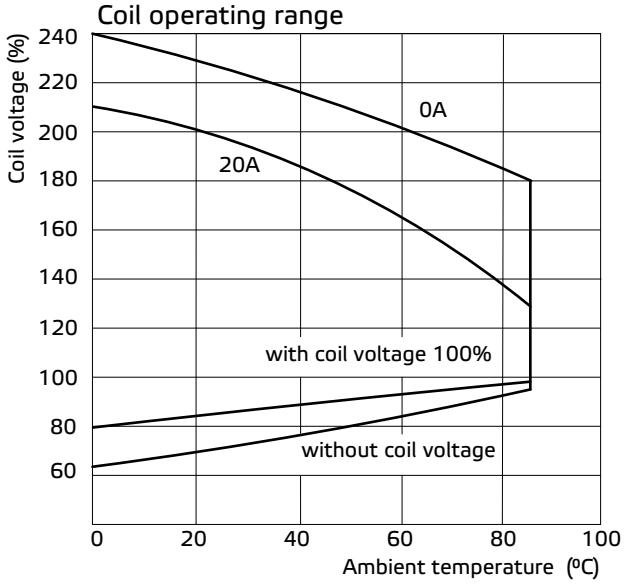
◆ 805



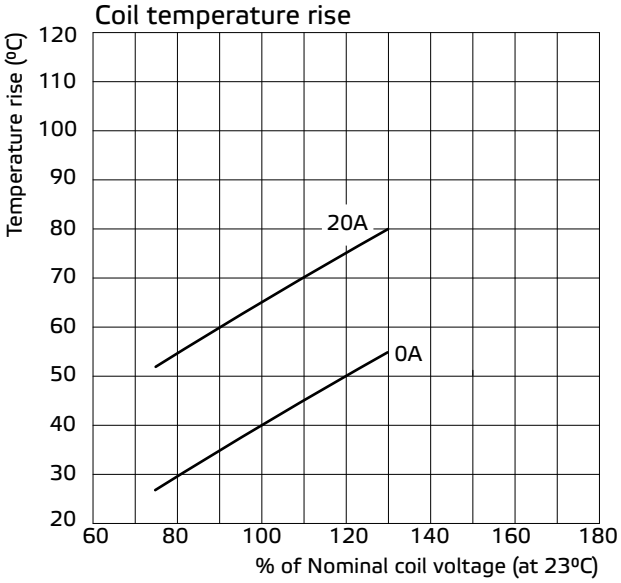
805

Engineering Data

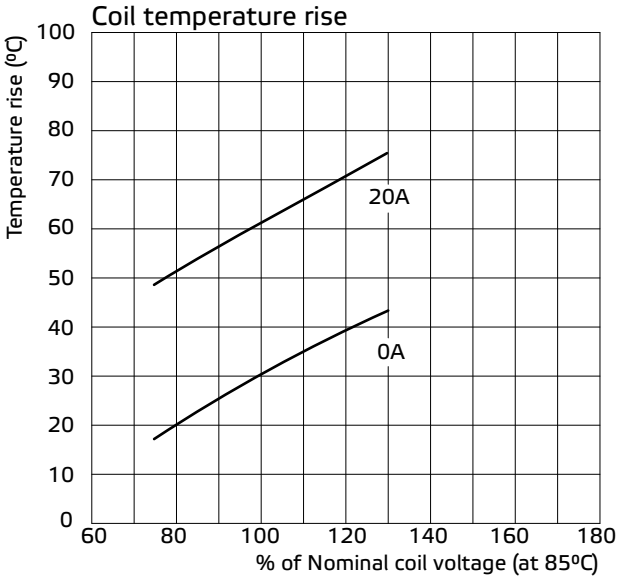
Coil operating range



Coil temperature rise



Coil temperature rise



891

Features

- 25A miniature general purpose Power Relay.
- With or without quick terminal & PCB terminal.
- CSA/CUS, TUV,UL/CUL approved.
- Designed for compressor load switching application and office equipment of motor control or lamp load switching.
- Comply with RoHS-Directive 2011/65/EU.

Type List

Terminal style	Contact form	Designation
WP (Quick terminal & PCB terminal)	SPNO	891WP-1A-C
P (PCB terminal)	SPNO	891P-1A-C

Ordering Information

891	WP	-	1A	-	F	-	C	XXVDC
1	2		3		4		5	6

1. 891 -- Basic series designation

2. P -- PCB terminal
   WP -- Socket terminal & PCB terminal

3. 1A -- Single pole normally open

4. Blank -- Standard type
   F -- Class F

5. C -- Flux tight

6. XXVDC -- Coil voltage (please refer to the coil rating data for the availability).

Contact Rating

Resistive load	25A 250VAC
Inductive load / Compressor load	Inrush 80A 240VAC cosϕ0.7 Steady state 20A 240VAC cosϕ0.9

Coil Rating (DC)

Rated voltage (V)	Rated current ±10 % at 23ºC (mA)	Coil resistance ±10 % at 23ºC (Ω)	Max. continuous voltage at 85ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
5	180	27.8	150 % of rated voltage	75 % of rated voltage	10 % of rated voltage	approx. 0.9W
6	150	40				
9	100	90				
12	75	160				
24	38	640				
48	19	2560				

891

Specification

Contact material	AgSnO alloy	
Contact resistance(1)	100mΩ Max.	
Operate time(1)	20ms Max.	
Release time (1)	10ms Max.	
Insulation resistance(1)	1000 MΩ Min. (DC 500V)	
Dielectric strength(1)	Between open contact : AC 1000V , 50/60Hz 1 min.	
	Between contact and coil : AC 4500V , 50/60Hz 1 min.	
Vibration resistance	Operating extremes	10~55Hz , amplitude 1.5 mm
	Damage limits	10~55Hz , amplitude 2.0 mm
Shock resistance	Operating extremes	10G
	Damage limits	100G
Life expectancy	Mechanical	5,000,000 operations (frequency 18,000 operations/hr)
	Electrical	100,000 operations (frequency 360 operations/hr)
Operating ambient temperature	-40~+ 85ºC (no freezing)	
Weight	Approx. 22g	

Note：(1) initial value

Safety Approval

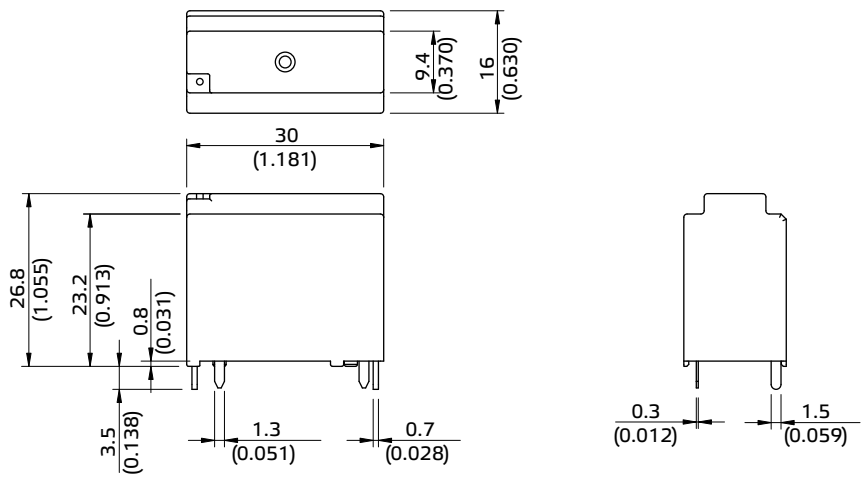
Certified	CSA / CUS	TUV	UL / CUL
File No.	1165173	R3-50003966	E88991

Safety Approval Rating

CSA / CUS	TUV	UL / CUL
25A 277VAC 1.5HP 125/250VAC	25A 250VAC 20A 250VAC cosϕ0.7	25A 277VAC 1.5HP 125VAC/250VAC 18FLA/98LRA 240VAC

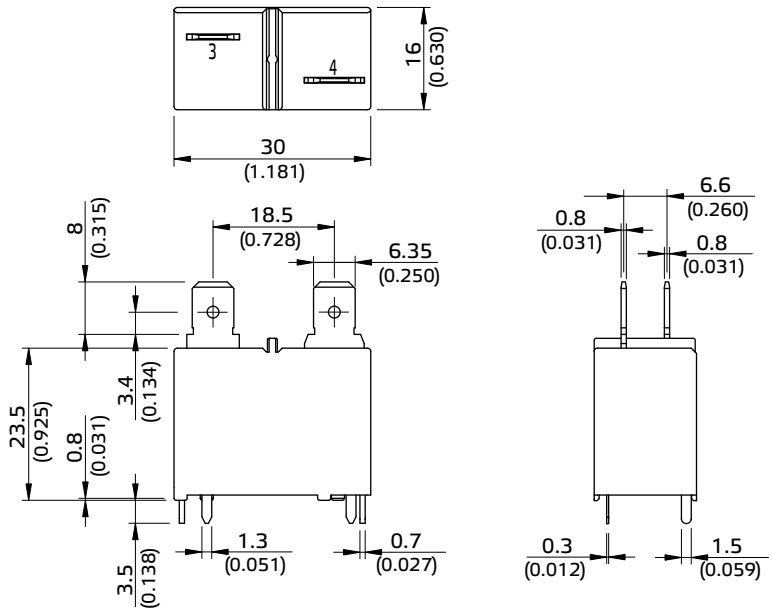
Outline Dimensions

◆891P

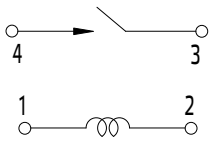


891

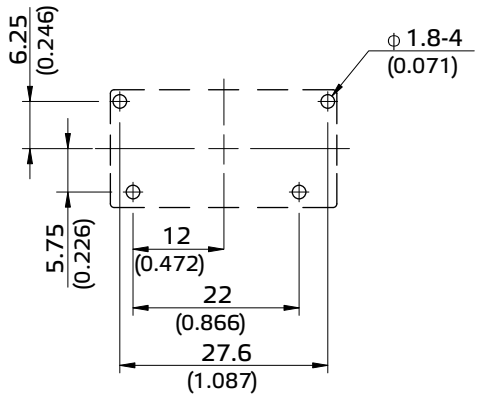
◆891WP



Wiring Diagram
BOTTOM VIEW

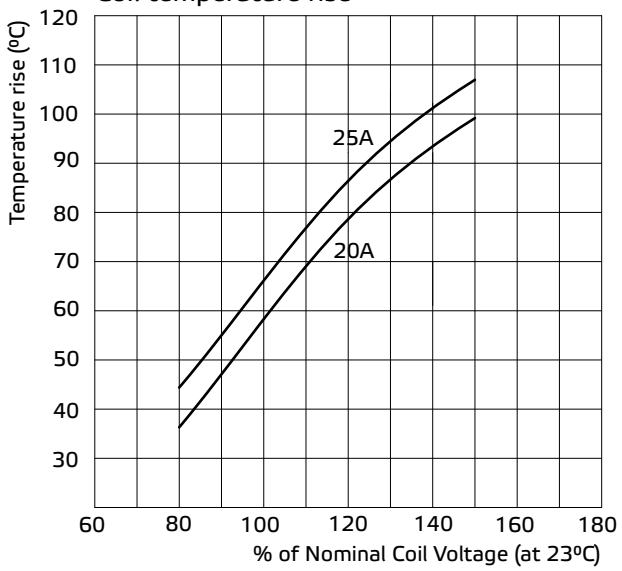


PC Board Layout
BOTTOM VIEW

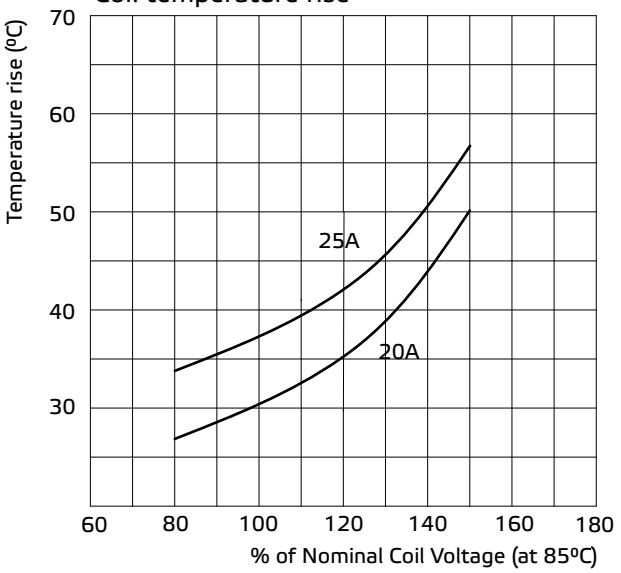


Engineering Data

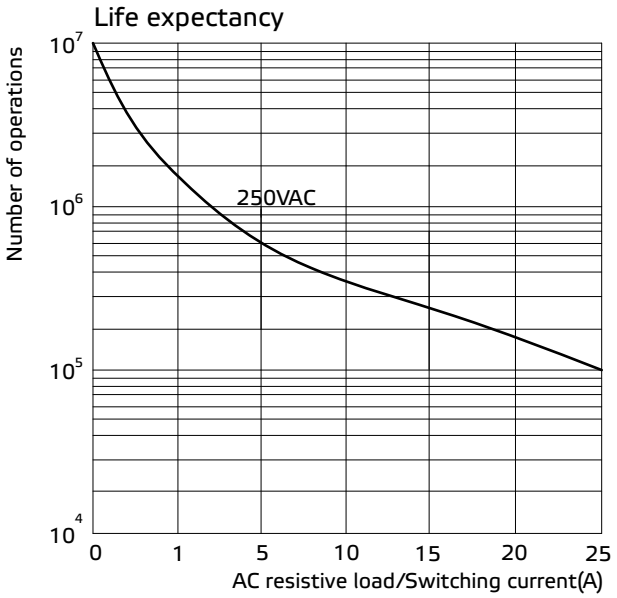
Coil temperature rise



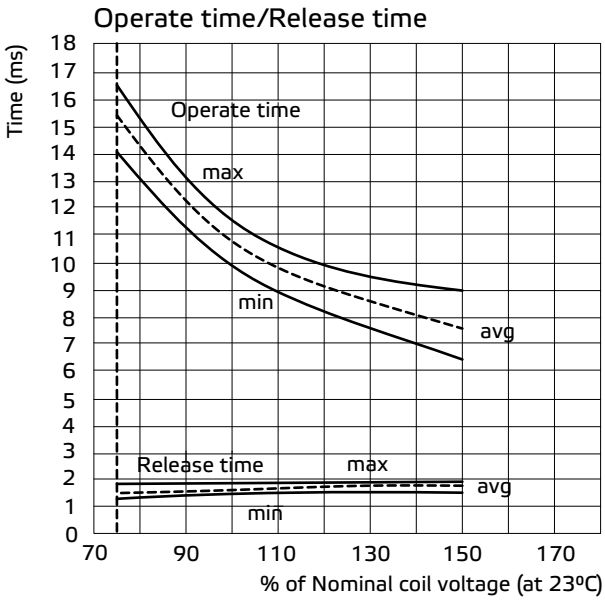
Coil temperature rise



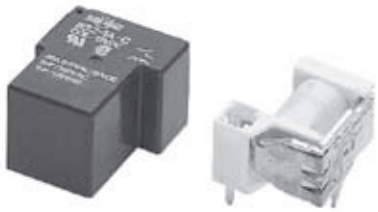
Life expectancy



Operate time/Release time



832



Features

- Heavy duty 30A general purpose Power Relays.
- UL/CUL (UL 508 &873), VDE safety approvals.
- Optional for open frame, dust cover, sealed type and with and without quick terminal on top, etc.
- High insulation type & high dielectric strength type available.
- Contact gap to 2.0mm (ideal for PV inverters), high dielectric strength 4000Vrms.
- UL Insulation Class F.
- Ideal for HVAC, UPS& power supply, Home Appliances.
- Comply with RoHS-Directive 2011/65/EU.

Type List

◆832

Terminal style	Contact form	Insulation system	Designation		
			Open type	Flux tight	Sealed type washable
PCB terminal	1A (SPNO)	-------	832-1A	832-1A-C	832-1A-S
			832-1AC	832-1AC-C	832-1AC-S
	1B (SPNC)	-------	832-1B	832-1B-C	832-1B-S
			832-1BC	832-1BC-C	832-1BC-S
	1C (SPDT)	-------	832-1C	832-1C-C	832-1C-S
			832-1CC	832-1CC-C	832-1CC-S
	1A (SPNO)	F	832-1A-F	832-1A-F-C	832-1A-F-S
			832-1AC-F	832-1AC-F-C	832-1AC-F-S
	1B (SPNC)	F	832-1B-F	832-1B-F-C	832-1B-F-S
			832-1BC-F	832-1BC-F-C	832-1BC-F-S
	1C (SPDT)	F	832-1C-F	832-1C-F-C	832-1C-F-S
			832-1CC-F	832-1CC-F-C	832-1CC-F-S

◆832A

PCB terminal	1A (SPNO)	-------	832A-1A	832A-1A-C	832A-1A-S
			832A-1AC	832A-1AC-C	832A-1AC-S
	1B (SPNC)	-------	832A-1B	832A-1B-C	832A-1B-S
			832A-1BC	832A-1BC-C	832A-1BC-S
	1C (SPDT)	-------	832A-1C	832A-1C-C	832A-1C-S
			832A-1CC	832A-1CC-C	832A-1CC-S
	1A (SPNO)	F	832A-1A-F	832A-1A-F-C	832A-1A-F-S
			832A-1AC-F	832A-1AC-F-C	832A-1AC-F-S
	1B (SPNC)	F	832A-1B-F	832A-1B-F-C	832A-1B-F-S
			832A-1BC-F	832A-1BC-F-C	832A-1BC-F-S
	1C (SPDT)	F	832A-1C-F	832A-1C-F-C	832A-1C-F-S
			832A-1CC-F	832A-1CC-F-C	832A-1CC-F-S

◆832AW

Terminal style	Contact form	Insulation system	Designation	
			Flanged cover	Sealed type washable (with flanged cover)
W (Quick terminal)	1A (SPNO)	-------	832AW-1A-C1	832AW-1A-S1
			832AW-1AC-C1	832AW-1AC-S1
	1C (SPDT)	-------	832AW-1C-C1	832AW-1C-S1
			832AW-1CC-C1	832AW-1CC-S1
	1A (SPNO)	F	832AW-1A-F-C1	832AW-1A-F-S1
			832AW-1AC-F-C1	832AW-1AC-F-S1
	1C (SPDT)	F	832AW-1C-F-C1	832AW-1C-F-S1
			832AW-1CC-F-C1	832AW-1CC-F-S1

◆832AWP

Terminal style	Contact form	Insulation system	Designation	
			Flux tight	Sealed type washable
WP (PCB terminal & Quick terminal)	1A (SPNO)	-------	832AWP-1A-C	832AWP-1A-S
			832AWP-1AC-C	832AWP-1AC-S
	1C (SPDT)	-------	832AWP-1C-C	832AWP-1C-S
			832AWP-1CC-C	832AWP-1CC-S
	1A (SPNO)	F	832AWP-1A-F-C	832AWP-1A-F-S
			832AWP-1AC-F-C	832AWP-1AC-F-S
	1C (SPDT)	F	832AWP-1C-F-C	832AWP-1C-F-S
			832AWP-1CC-F-C	832AWP-1CC-F-S

◆832AWP (Cover with shroud)

Terminal style	Contact form	Insulation system	Designation	
			Flux tight (with shroud)	Sealed type washable (with shroud)
WP (PCB terminal & Quick terminal)	1A (SPNO)	-------	832AWP-1A-CF	832AWP-1A-SF
			832AWP-1AC-CF	832AWP-1AC-SF
	1C (SPDT)	-------	832AWP-1C-CF	832AWP-1C-SF
			832AWP-1CC-CF	832AWP-1CC-SF
	1A (SPNO)	F	832AWP-1A-F-CF	832AWP-1A-F-SF
			832AWP-1AC-F-CF	832AWP-1AC-F-SF
	1C (SPDT)	F	832AWP-1C-F-CF	832AWP-1C-F-SF
			832AWP-1CC-F-CF	832AWP-1CC-F-SF

832

◆832A enlarge contact gap type

Terminal style	Contact form	Special feature	Designation	
			Flux tight	Sealed type washable
PCB terminal	1A (SPNO)	----------	832A-1A-C-H	832A-1A-S-H
	1A (SPNO)	High dielectric strength type	832A-1A-C-BH	832A-1A-S-BH

Ordering Information

832	A	WP	-	1C	-	F	-	B	XXVDC
1	2	3		4		5		6	7

1. 832 -- Basic series designation

2. Blank -- General type (provided with 2 common terminals)
   A -- Different type (provided with 1 common terminal)

3. Blank -- PCB terminal
   W -- Quick terminal
   WP -- PCB terminal & quick terminal

4. 1A -- Single pole normally open, contact material AgSnO
   1B -- Single pole normally closed, contact material AgSnO
   1C -- Single pole double throw, contact material AgSnO
   1AC -- Single pole normally open, contact material AgNi
   1BC -- Single pole normally closed, contact material AgNi
   1CC -- Single pole double throw, contact material AgNi

5. Blank -- Standard type
   F -- Class F

6. Blank -- Open type
   C -- Flux tight
   D -- Dust cover
   S -- Sealed type washable
   C1 -- With flanged cover
   S1 -- Sealed type washable with flanged cover
   CF -- Flux tight with shroud
   SF -- Sealed type washable with shroud

7. Blank -- Standard type
   B -- With Insulation barrier
   BH -- With Insulation barrier and 1.9 mm Contact gap (for SPNO type only)
   H -- 1.9 mm contact gap (for SPNO type only)

8. XXVDC -- Coil voltage (please refer to the coil rating data for the availability).

Contact Rating

◆832 series

Load type	1A	1B	1C	
			NO	NC
Resistive load	30A 240VAC 20A 30VDC	15A 240VAC	20A 240VAC 20A 30VDC	10A 240VAC 10A 30VDC

◆832A H/BH

Resistive load	20A 250VAC

Coil Rating (DC)

◆832 series

Rated voltage (V)	Rated current ±10 % at 23ºC (mA)	Coil resistance ±10 % at 23ºC (Ω)	Max. continuous voltage at 85ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
5	185	27	100 % of rated voltage	75 % of rated voltage	10 % of rated voltage	approx. 0.93W
6	150	40				
9	93	97				
12	77	155				
24	36	660				
48	18	2560				
110	8	13450				

◆832A H/BH

Rated voltage (V)	Rated current ±10 % at 23ºC (mA)	Coil resistance ±10 % at 23ºC (Ω)	Max. continuous voltage at 60ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
6	183	32.7	100 % of rated voltage	80 % of rated voltage	10 % rated voltage	approx. 1.1W
12	92.3	130				
24	46	524				
48	22.9	2094				

Specification

Contact material	AgSnO / AgNi alloy
Contact gap	1.9 mm Min. (for 832A H/BH)
Contact resistance(1)	50 mΩ Max.
Operate time(1)	15 ms Max.
	20 ms Max. (for 832A H/BH)
Release time(1)	10 ms Max.
	5 ms Max. (for 832A H/BH)
Insulation resistance(1)	1000 MΩ Min. (DC 500V)
	100 MΩ Min. (DC 500V) (for 832A H/BH)
Surge voltage withstand	Between contact and coil : 6KV 1.2X50μS (for 832A)

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Dielectric strength(1)	Between open contact	: 1500Vrms 50/60Hz 1min.
	Between contact and coil	: 1500Vrms 50/60Hz 1min. : 2500Vrms 50/60Hz 1min(for 832A) High dielectric strength type 4000Vrms 50/60Hz 1 min.
Vibration resistance	Operating extremes	10~55Hz , amplitude 1.5 mm
	Damage limits	10~55Hz , amplitude 1.5 mm
Shock resistance	Operating extremes	10G
	Damage limits	100G
Life expectancy	Mechanical	10,000,000 operations 5,000,000 operations (for 832A H/BH) (frequency 18,000 operations/hr)
	Electrical	100,000 operations (frequency 1,200 operations/hr) 20,000 operations for 20A/250VAC(for 832A H/BH) 100,000 operations for 10A/250VAC(for 832A H/BH) (frequency 900 operations/hr)
Operating ambient temperature	-55~+85ºC (no freezing)	
Weight	Approx. 22 g (open type)、27g (832A) 36 g (832AWP)、38g (832AW)	

Note：(1) initial value

Safety Approval

Certified	UL / CUL	CSA / CUS	VDE
File No.	E88991	1429333	6615

Safety Approval Rating

◆832 series (UL /CUL 、CSA/CUS)

Contact material (AgSnO)		Contact material (AgNi)	
NO	NC	NO	NC
30A 277VAC 20A 30VDC 2HP 250VAC 1HP 125VAC 30 FLA, 80LRA 240VAC 16 FLA, 96LRA 250VAC TV-5	30A 250VAC 15A 277VAC 15A 30VDC 1/2HP,4.9FLA 250VAC 1/4HP,5.8FLA 125VAC 12 FLA, 33LRA 250VAC	30A 277VAC 24A 240VAC	30A 277VAC 24A 240VAC

◆832 series (VDE)

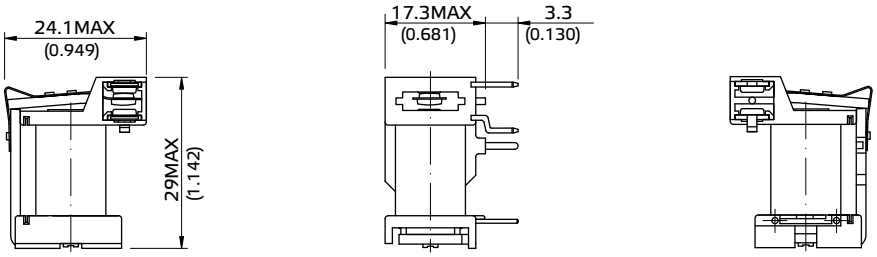
1A	1B	1C
30A 250VAC	20A 250VAC	20A 250VAC

◆832A H/BH

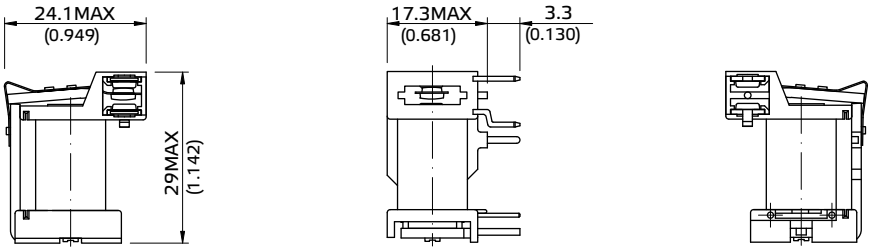
UL / CUL、CSA / CUS	VDE
30A 277VAC 30A 30VDC 1HP, 8FLA 250VAC	20A 250VAC T85

Outline Dimensions

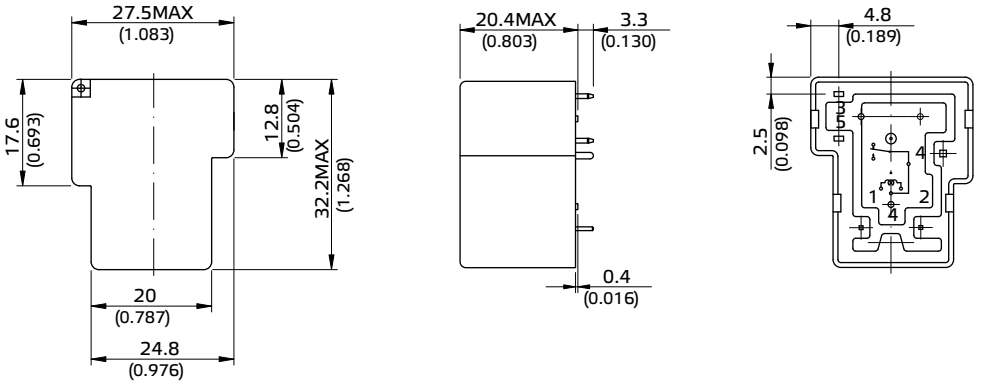
◆832A(OPEN)



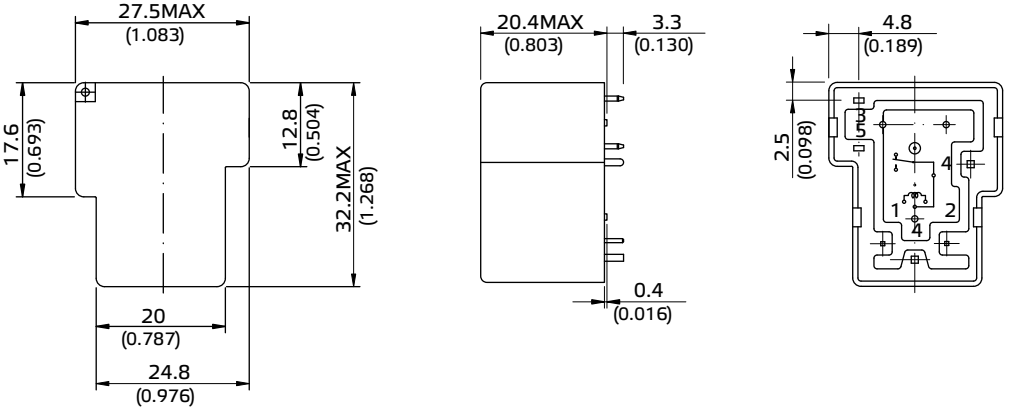
◆832(OPEN)



◆832A

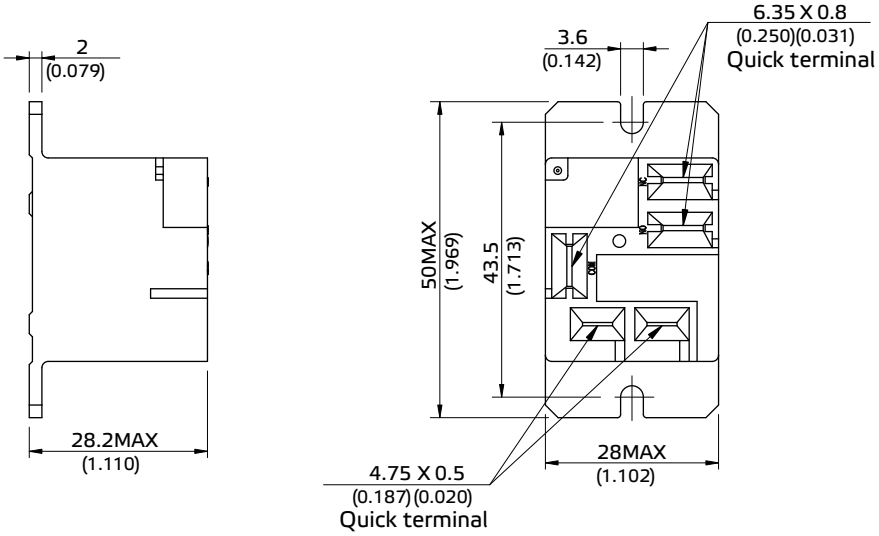


◆832

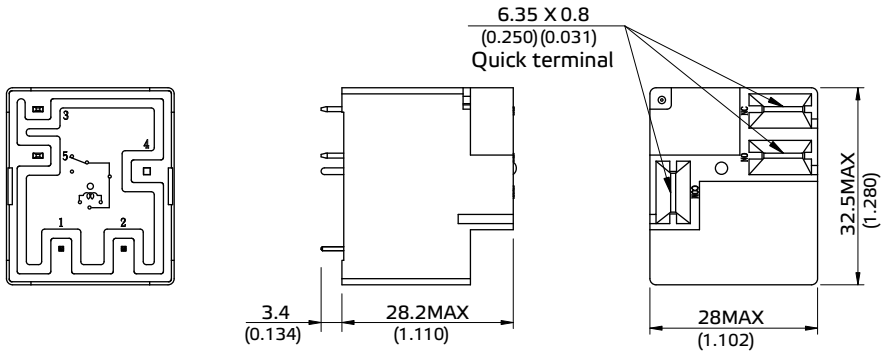


832

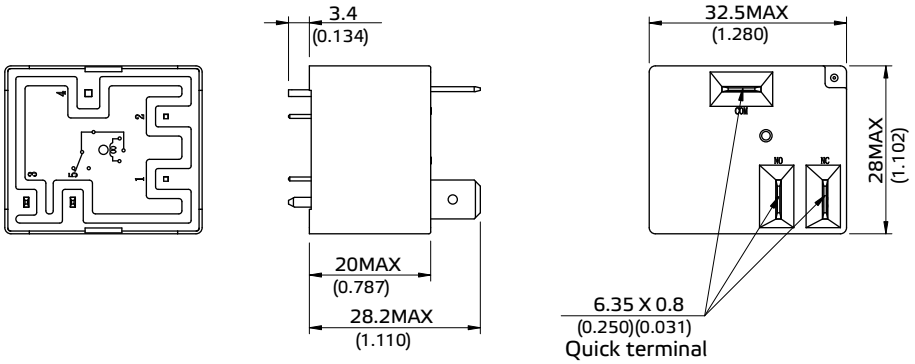
◆832AW



◆832AWP(Cover with shroud)

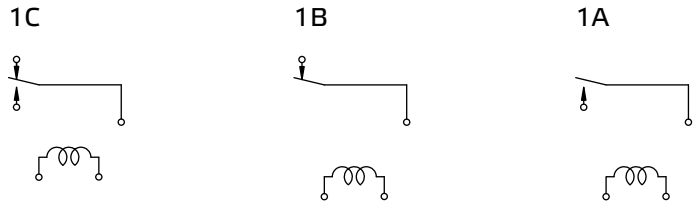


◆832AWP

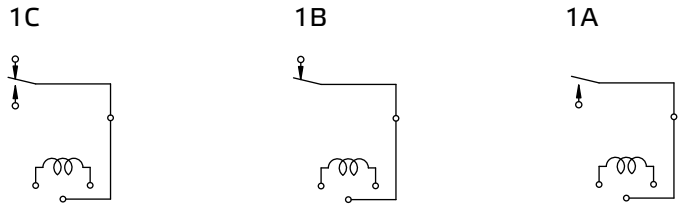


Wiring Diagram
BOTTOM VIEW

◆832A

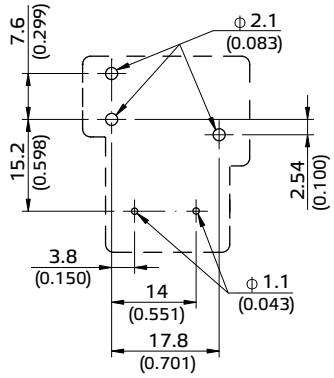


◆832

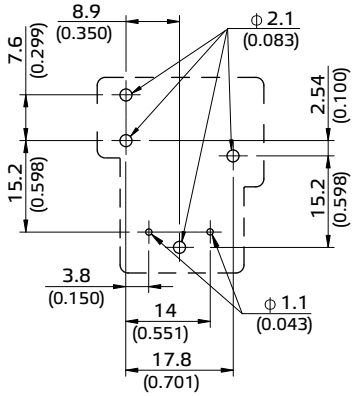


PC Board Layout
BOTTOM VIEW

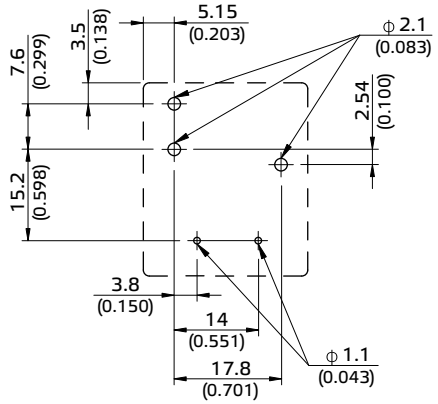
◆832A



◆832



◆832AWP



SONG CHUAN

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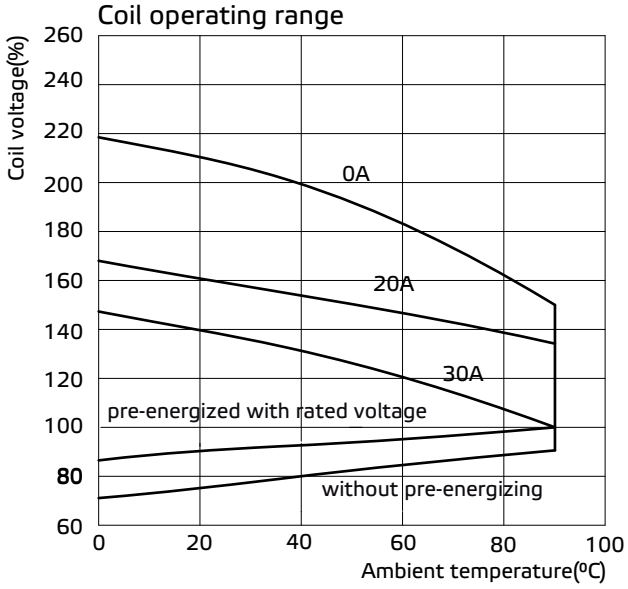
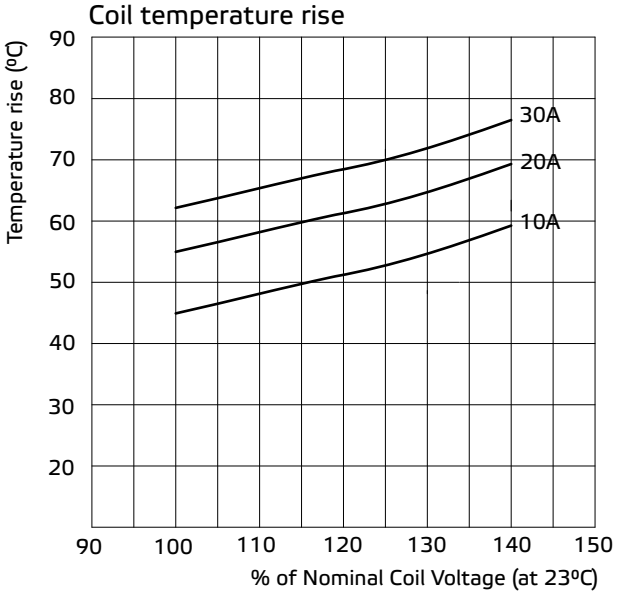
Engineering Data

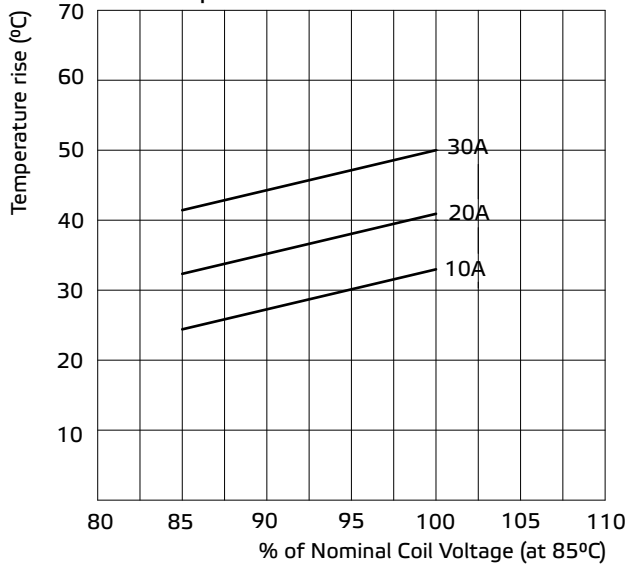
Coil operating range



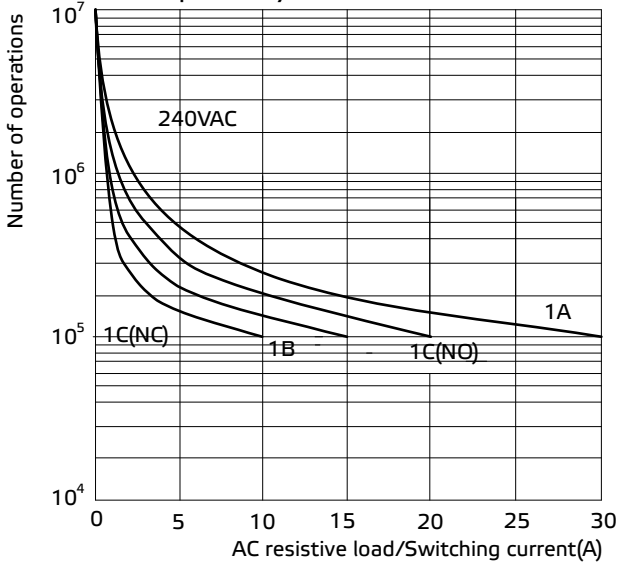
Coil temperature rise



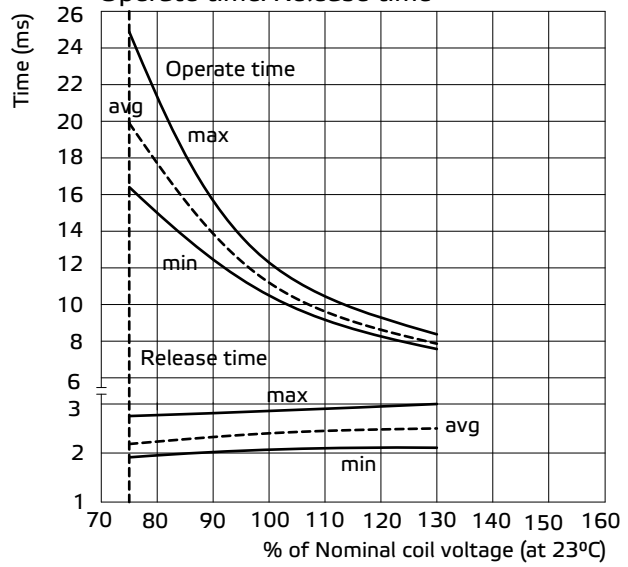
Coil temperature rise



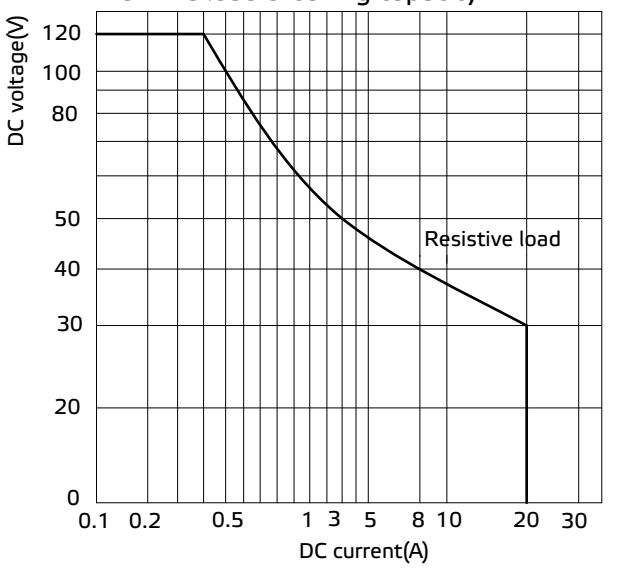
Life expectancy



Operate time/Release time



Max. DC load breaking capacity



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Features

- Heavy duty 30A 240VAC, 25A 240VAC power type.
- AC & DC coils are both available.
- PCB terminals and quick terminal types.
- Optional for special large contact gap 3.0mm version.
- SPNO-ST & DPNO-ST contact configuration.
- Comply with RoHS-Directive 2011/65/EU.

Type List

Terminal style	Contact form	Enlarge spacing type	Designation			
			Dust cover	Flux tight	Flanged cover	Sealed type washable
S (Quick terminal)	1A (SPDM)	-------	841-S-1A-D	841-S-1A-C	841-S-1A-C1	841-S-1A-S
		H	841-S-1A-D-H	841-S-1A-C-H	841-S-1A-C1-H	841-S-1A-S-H
	2A (DPDM)	-------	841-S-2A-D	841-S-2A-C	841-S-2A-C1	841-S-2A-S
		H	841-S-2A-D-H	841-S-2A-C-H	841-S-2A-C1-H	841-S-2A-S-H
P (PCB terminal)	1A (SPDM)	-------	841-P-1A-D	841-P-1A-C	-------	841-P-1A-S
		H	841-P-1A-D-H	841-P-1A-C-H	-------	841-P-1A-S-H
	2A (DPDM)	-------	841-P-2A-D	841-P-2A-C	-------	841-P-2A-S
		H	841-P-2A-D-H	841-P-2A-C-H	-------	841-P-2A-S-H

Ordering Information

841	-	S	-	1A	-	F	-	C	-	H	XXVXC
1		2		3		4		5		6	7

1. 841 -- Basic series designation

2. S -- Quick terminal
   P -- PCB terminals

3. 1A -- Form A, single-pole, double-make (SPDM)
   2A -- Form A, double-pole, double-make (DPDM)

4. Blank -- Standard type
   F -- Class F

5. C -- Flux tight
   D -- Dust cover
   S -- Sealed type washable
   C1 -- Flanged cover
   D1 -- Dust cover with flange
   S1 -- Plastic sealed washable with flange

6. Blank -- Standard type
   H -- Enlarged insulation spacing type

7. XXVXC -- Coil voltage (please refer to the coil rating data for the availability).

Contact Rating

Load type	1A (SPDM)	2A (DPDM)
Rated load (Resistive)	30A 220VAC	25A 220VAC
Max. Switching Current	30A	25A
Max. Switching Voltage	277VAC	277VAC
Max. Switching Capacity	6600VA	5500VA

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Coil Rating (DC)

Rated voltage (V)	Rated current ±10 % at 23ºC (mA)	Coil resistance ±10 % at 23ºC (Ω)	Max. continuous voltage at 70ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
3	638	4.7	110 % of rated voltage	75 % of rated voltage	10 % of rated voltage	approx. 1.92W
6	319	18.8				
12	160	75				
24	80	300				
48/50	40/41.6	1200				
100	19.2	5200				
110	17.4	6300				
200	9.5	21000				

Coil Rating (AC)

Rated voltage (V)	Rated current +15/-20% at 23ºC (mA)	Coil resistance +15/-20% at 23ºC (Ω)	Max. continuous voltage at 70ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
6	275	15	110 % of rated voltage	80 % of rated voltage	10 % of rated voltage	approx. 1.7VA ~ 2.7VA
12	138	75				
24	74	300				
48/50	39/40	1,200				
100/120	18.7/22.1	5,200				
200/240	9.1/10.8	21,000				

Specification

Contact material	AgSnO alloy	
Contact resistance (1)	100 mΩ Max.	
Operate time (1)	30 ms Max.	
Release time (1)	30 ms Max.	
Insulation resistance (1)	1000 MΩ Min. (DC 500V)	
Dielectric strength (1)	Between open contact : AC 2000V , 50/60Hz 1 min.	
	Between contact and coil : AC 4000V , 50/60Hz 1 min.	
	Between contact circuits : AC 2000V , 50/60Hz 1 min.	
Vibration resistance	Operating extremes	10~55Hz , amplitude 1.5 mm
	Damage limits	10~55Hz , amplitude 1.5 mm
Shock resistance	Operating extremes	10G
	Damage limits	100G

Life expectancy	Mechanical	5,000,000 operations (frequency 18,000 operations/hr)
	Electrical	100,000 operations (frequency 900 operations/hr)
Operating ambient temperature	-55~+70ºC (no freezing)	
Weight	Approx. 90 g	

Note： (1) initial value.

Safety Approval

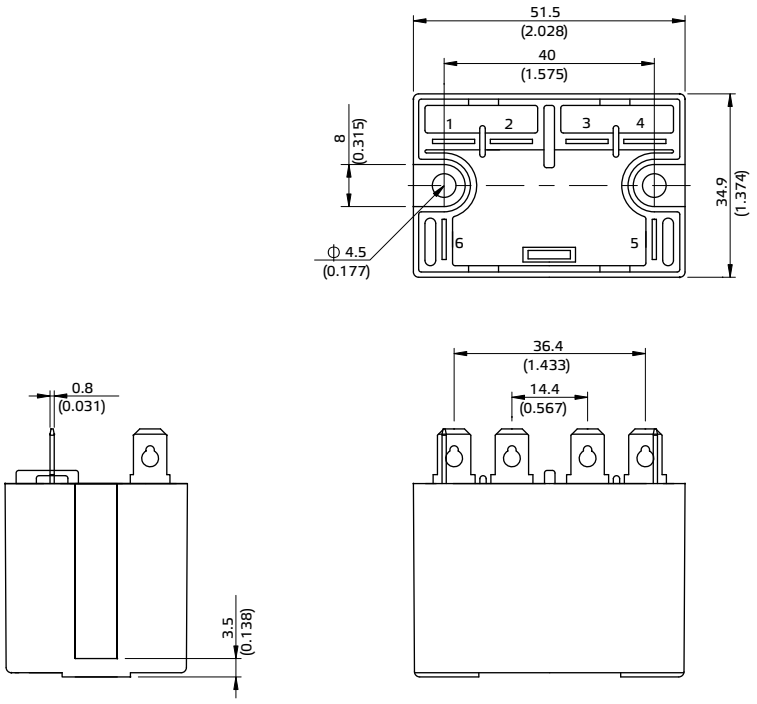
Certified	UL / CUL	TUV
File No.	E88991	R9653713

Safety Approval Rating

UL / CUL		TUV	
1A	2A	1A	2A
30A 277VAC TV-10 10A 277VAC 1.5HP 20FLA, 125VAC 3HP 14.1FLA, 277VAC	25A 277VAC TV-10 10A 277VAC 1HP 16FLA, 125VAC 2HP 9.96FLA, 277VAC	30A 250VAC 25A 250VAC cos ϕ 0.4 30A 125VAC cos ϕ 0.4	25A 250VAC 25A 250VAC cos ϕ 0.4

Outline Dimensions

◆841-S-2A (C,D,V,S)



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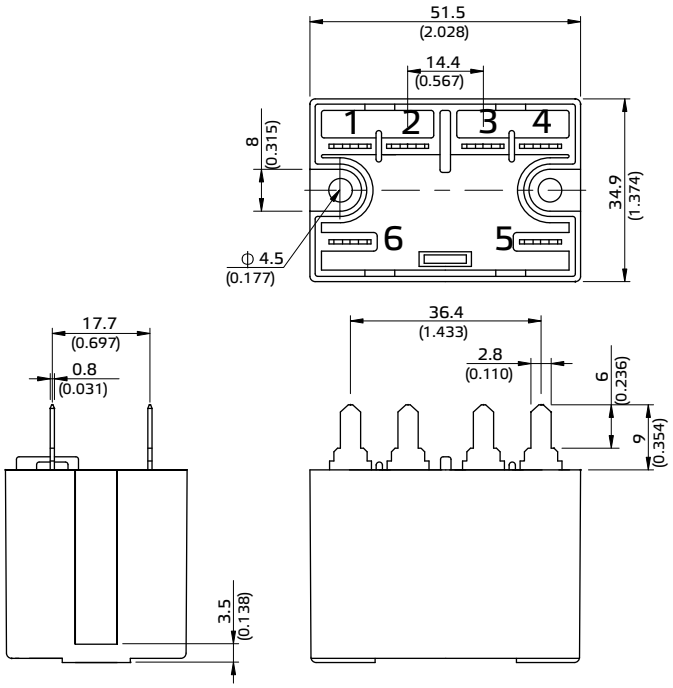
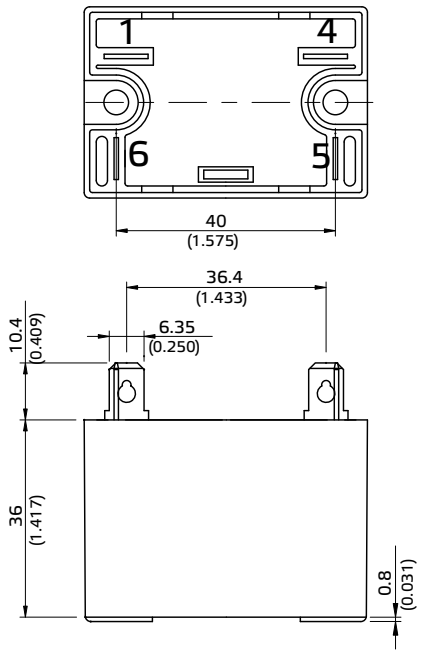
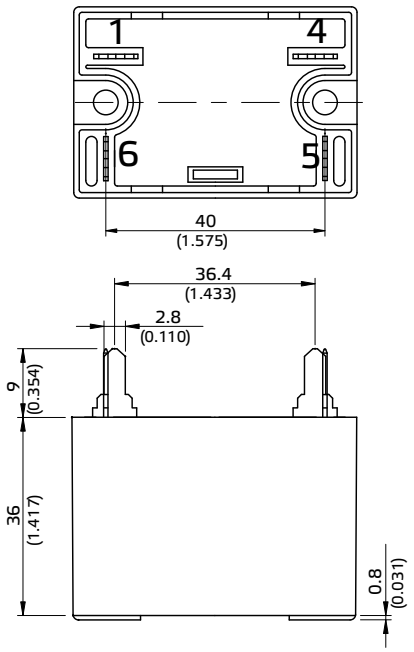
◆841-P-2A (C,D,V,S)



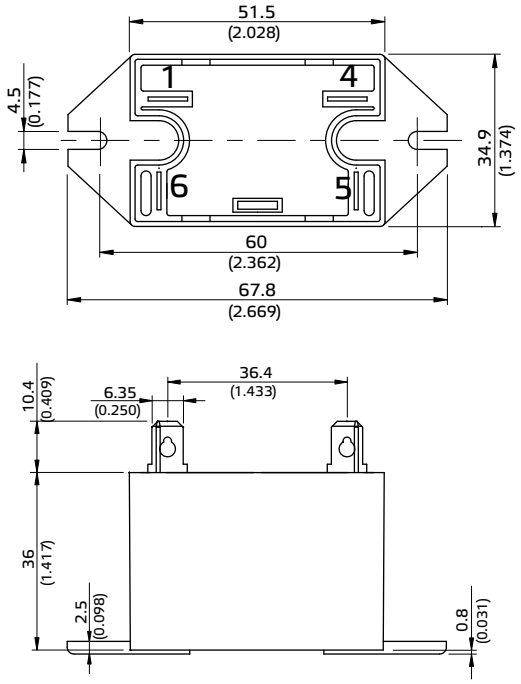
◆841-S-1A (C,D,V,S)



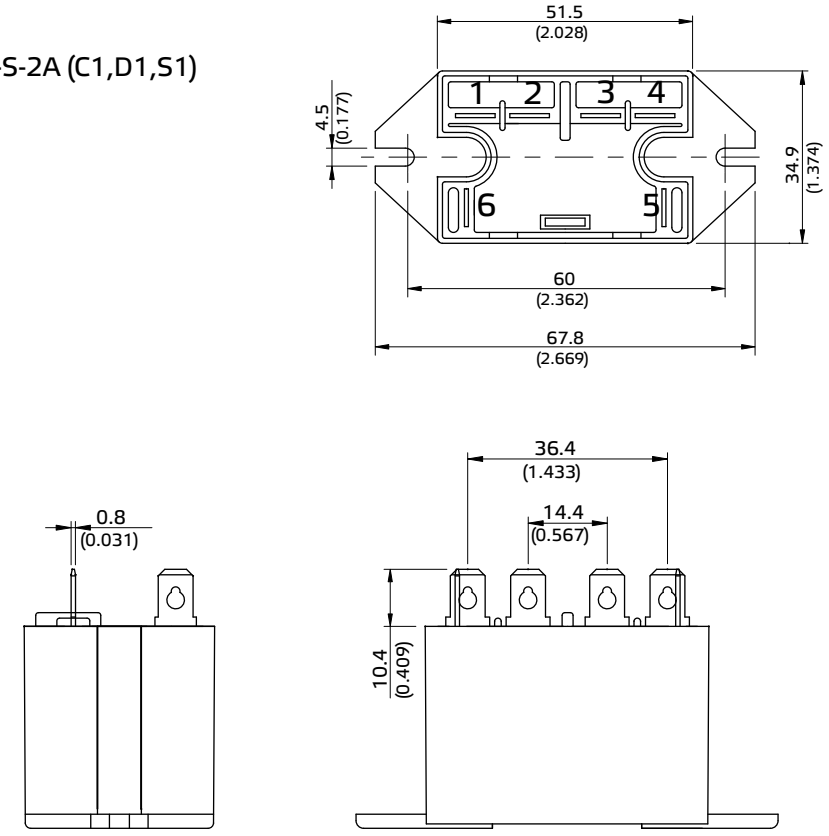
◆841-P-1A (C,D,V,S)



◆841-S-1A (C1,D1,S1)



◆841-S-2A (C1,D1,S1)



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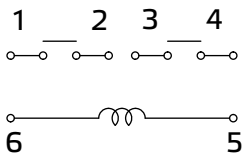
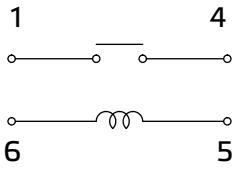
Wiring Diagram
BOTTOM VIEW

2A

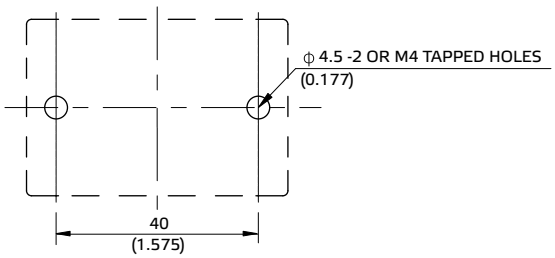


1A

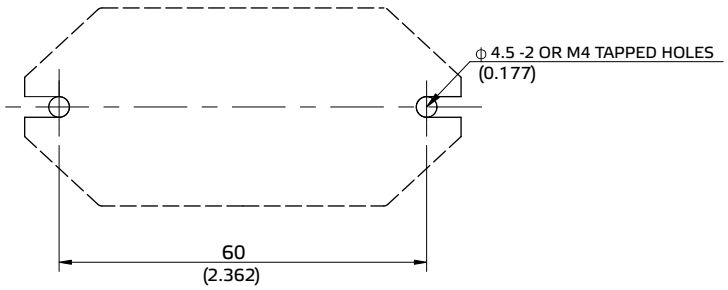


Mounting Holes
BOTTOM VIEW

◆841-S



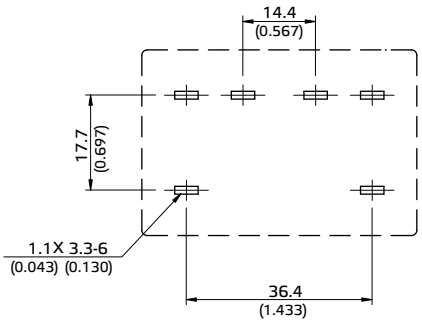
◆841-S (C1,D1,S1)



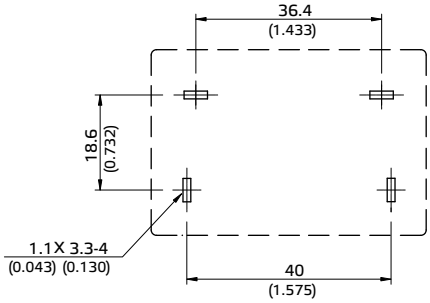
PC Board Layout
BOTTOM VIEW

◆841-P

2A

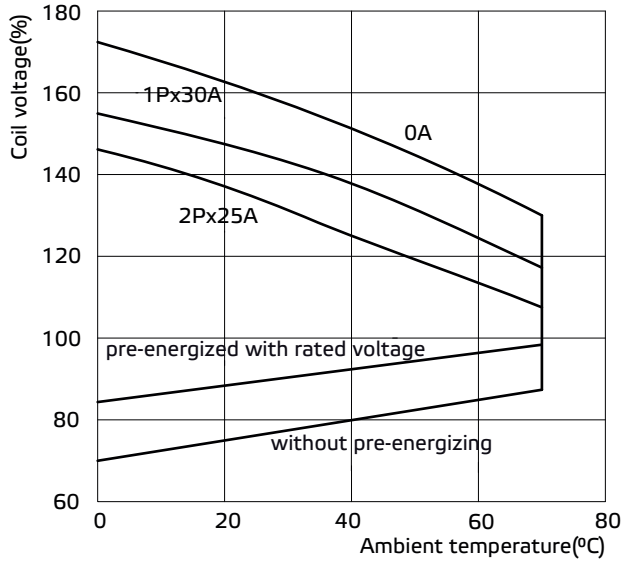


1A

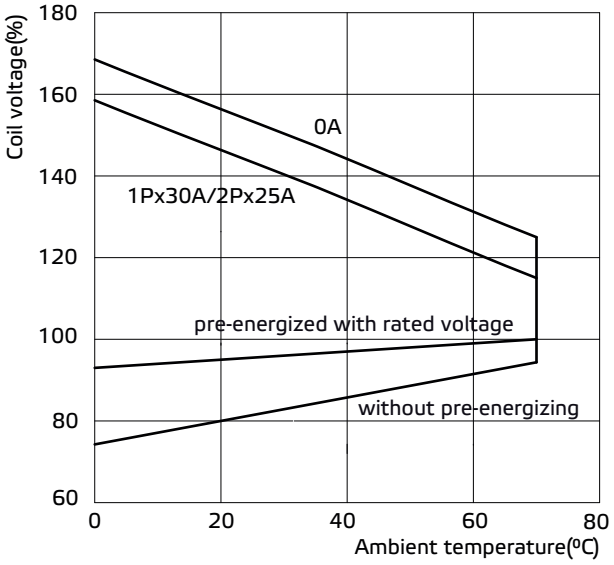


Engineering Data

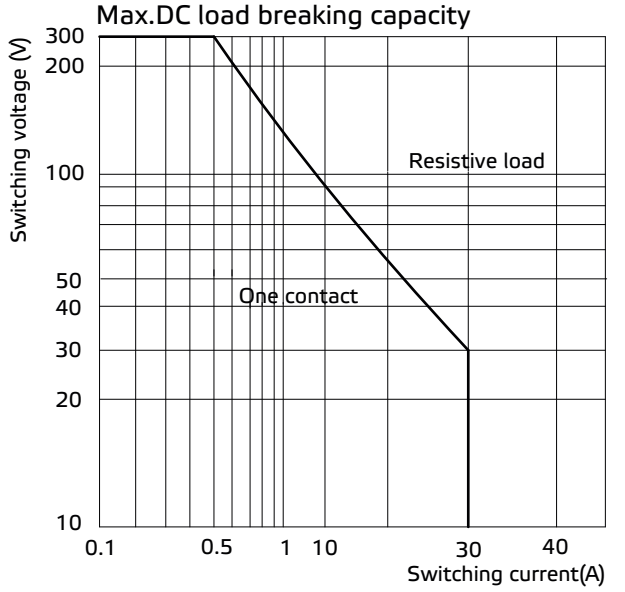
Coil operating range DC



Coil operating range AC

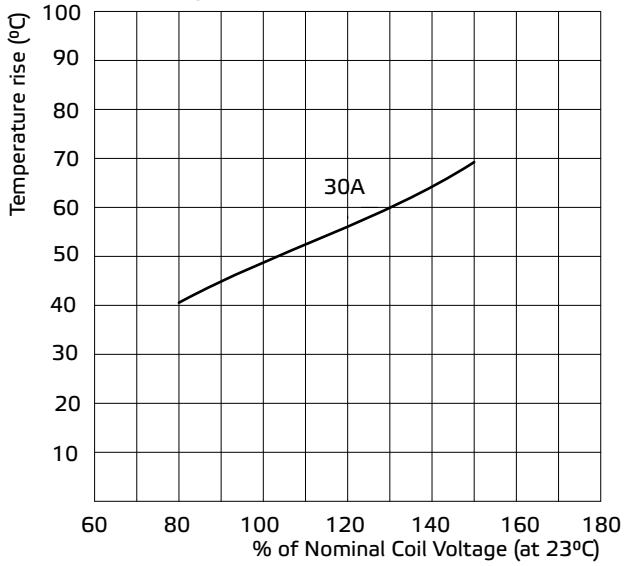


Max.DC load breaking capacity

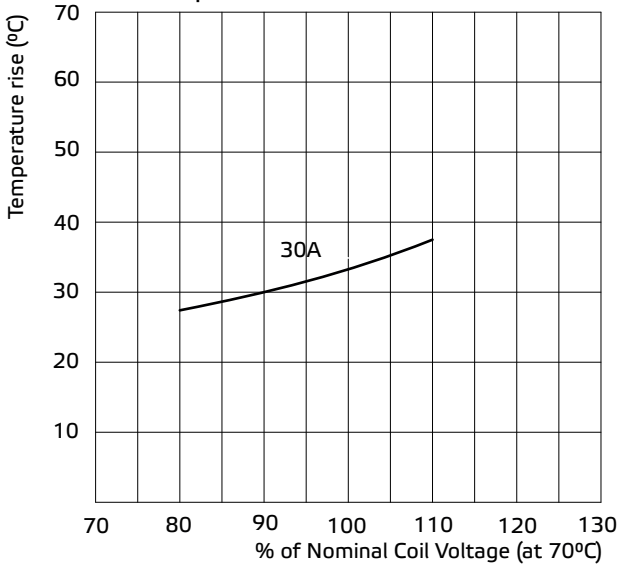


◆ 841(1P)

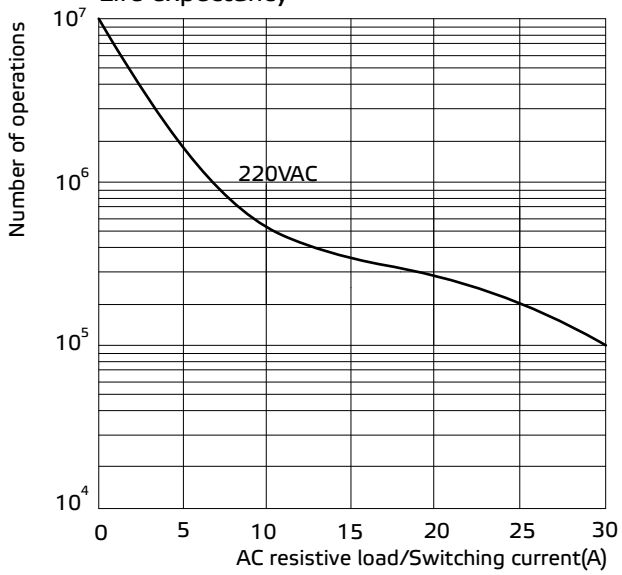
Coil temperature rise



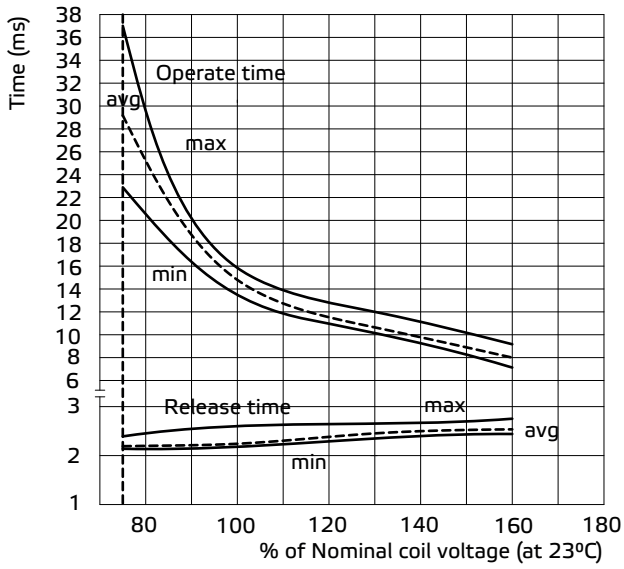
Coil temperature rise



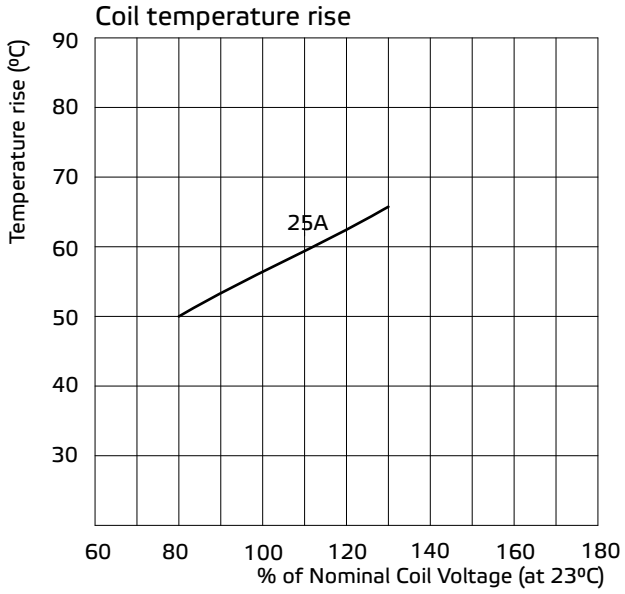
Life expectancy

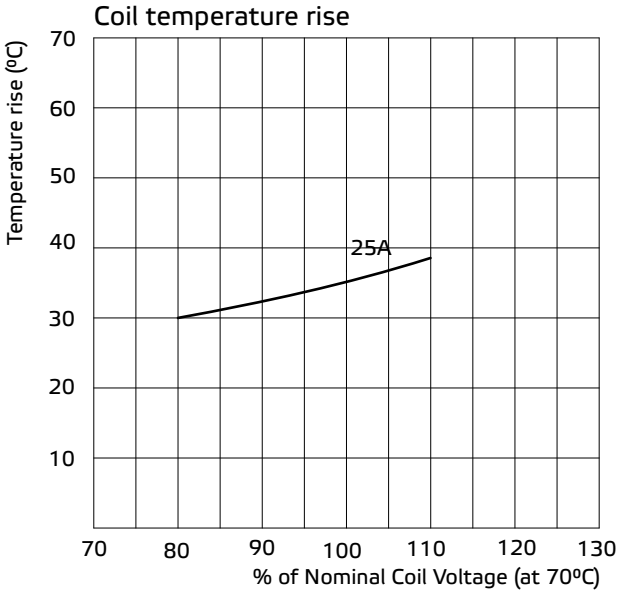


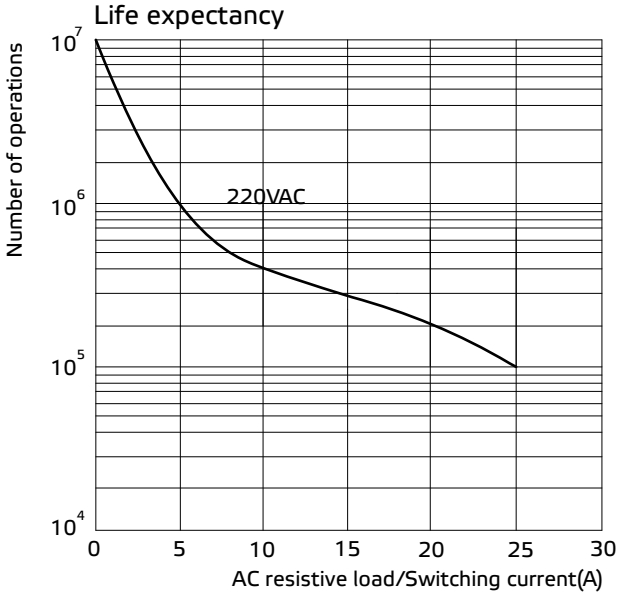
Operate time/Release time

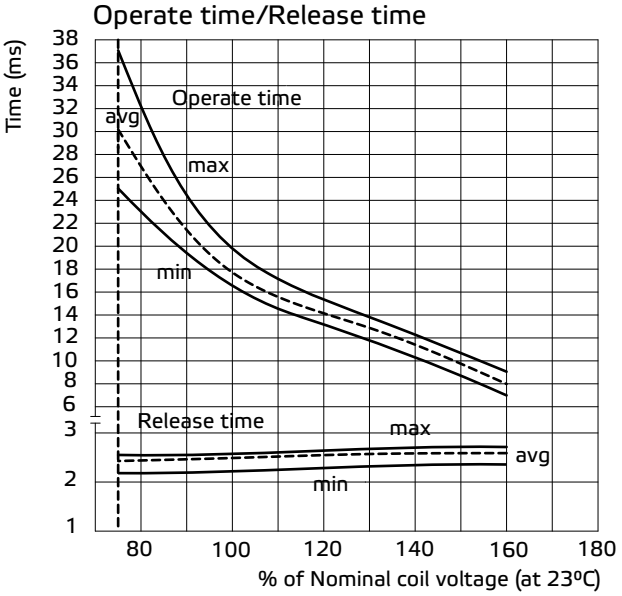


◆841(2P)









832HA

Features

- Heavy duty 40A general purpose PCB Power Relay.
- Available for top faston, flux tight, sealed versions.
- UL Class F as standard.
- Special design for UPS, power supply of high rating application.
- Comply with RoHS-Directive 2011/65/EU.

Type List

Terminal style	Contact form	Insulation system	Designation		
			Open type	Flux tight	Sealed type washable
PCB terminal	1A (SPNO)	F	832HA-1A-F	832HA-1A-F-C	832HA-1A-F-S
	1B (SPNC)	F	832HA-1B-F	832HA-1B-F-C	832HA-1B-F-S
	1C (SPDT)	F	832HA-1C-F	832HA-1C-F-C	832HA-1C-F-S
WP (PCB terminal & Quick terminal)	1A (SPNO)	F	832HAWP-1A-F	832HAWP-1A-F-C	832HAWP-1A-F-S
	1B (SPNC)	F	832HAWP-1B-F	832HAWP-1B-F-C	832HAWP-1B-F-S
	1C (SPDT)	F	832HAWP-1C-F	832HAWP-1C-F-C	832HAWP-1C-F-S

Ordering Information

832	HA	WP	-	1C	-	F	-	C	XXVDC
1	2	3		4		5		6	7

1. 832 -- Basic series designation
2. HA -- High power type
3. Blank -- PCB terminal
   W -- Quick terminal
   WP -- PCB terminal & Quick terminal
4. 1A -- Single pole normally open
   1B -- Single pole normally closed
   1C -- Single pole double throw
5. F -- Class F
6. Blank -- Open type
   C -- Flux tight
   S -- Sealed type washable
   C1 -- With flanged cover
   S1 -- Sealed type washable with flanged cover
7. XXVDC -- Coil voltage (please refer to the coil rating data for the availability).

Contact Rating

Resistive load	NO: 40A 240VAC ; NC: 40A 240VAC

Coil Rating (DC)

Rated voltage (V)	Rated current ±10 % at 23ºC (mA)	Coil resistance ±10 % at 23ºC (Ω)	Max. continuous voltage at 70ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
5	185	27	110 % of rated voltage	80 % of rated voltage	10 % of rated voltage	approx. 0.93W
6	150	40				
12	77	155				
24	36	660				
48	18	2560				

832HA

Specification

Contact material	AgSnO alloy	
Contact resistance (1)	50 mΩ Max.	
Operate time(1)	15 ms Max.	
Release time (1)	10 ms Max.	
Insulation resistance(1)	1000 MΩ Min. (DC 500V)	
Surge voltage withstand	Between contact and coil : 6KV 1.2X50μS	
Dielectric strength (1)	Between open contact : 1500Vrms 50/60Hz 1min.	
	Between contact and coil : 2500Vrms 50/60Hz 1min	
Vibration resistance	Operating extremes	10 ~ 55Hz , amplitude 1.5 mm
	Damage limits	10 ~ 55Hz , amplitude 1.5 mm
Shock resistance	Operating extremes	10G
	Damage limits	100G
Life expectancy	Mechanical	2,000,000 operations (frequency 18,000 operations/hr)
	Electrical	NO:30,000 operations NC:10,000 operations (frequency 900 operations/hr)
Operating ambient temperature	-55 ~ +70℃ (no freezing)	
Weight	Approx. 22 g (open type), 27g (with cover), 36g (WP) , 38g (W)	

Note: (1) initial value

Safety Approval

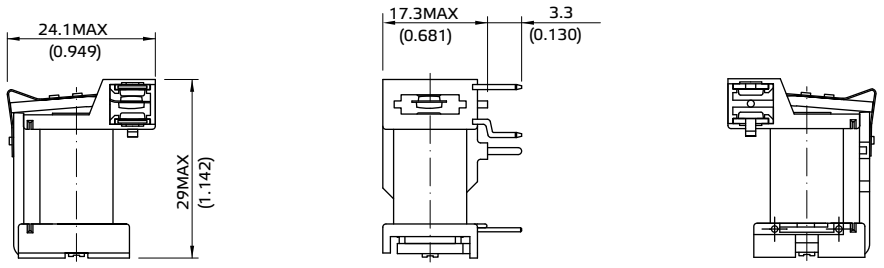
Certified	UL / CUL
File No.	E88991

Safety Approval Rating

UL / CUL
NO: 40A 277VAC
NC: 40A 277VAC

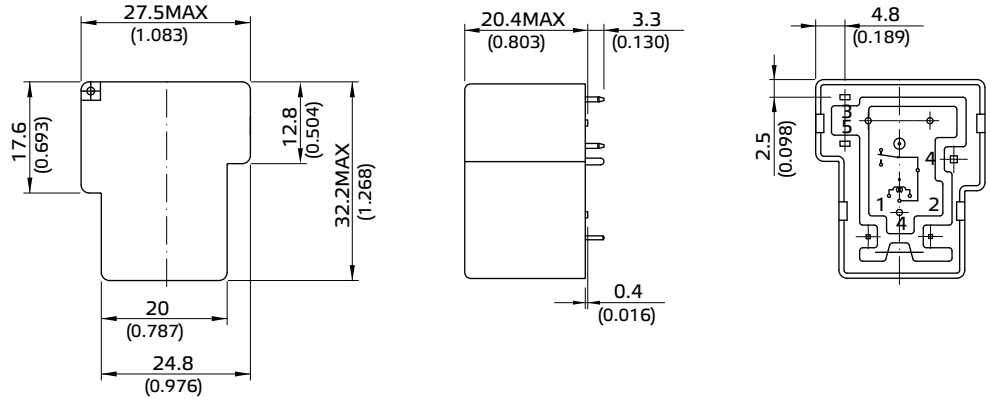
Outline Dimensions

◆832HA(OPEN)

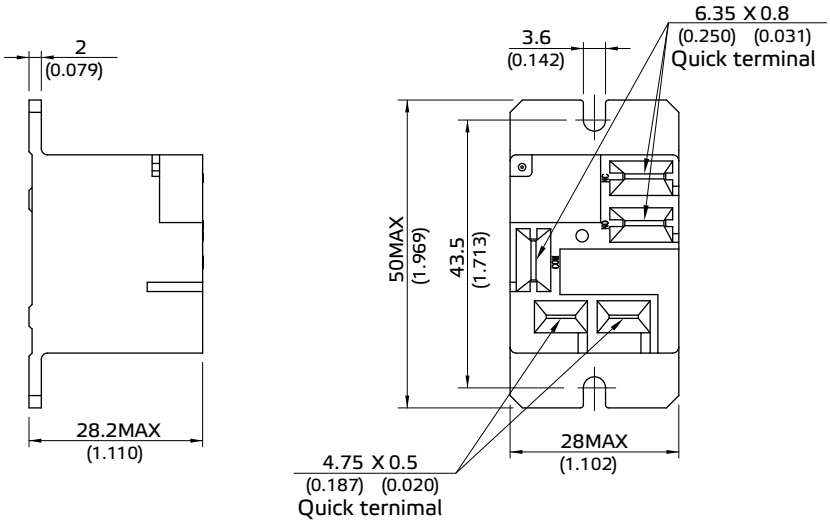


832HA

◆832HA



◆832HAW



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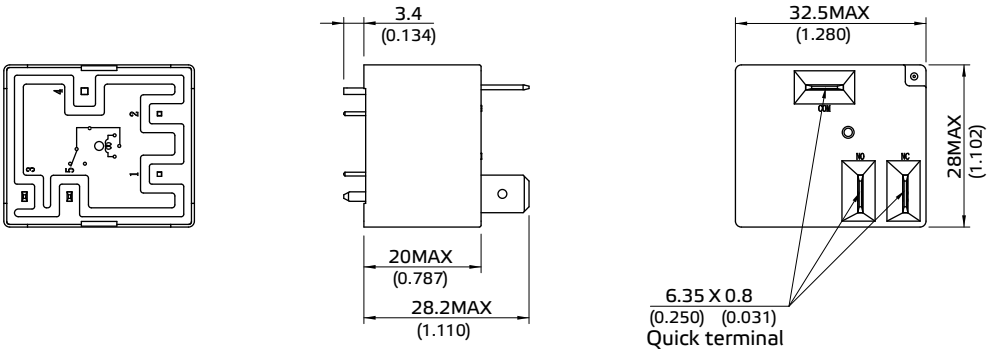
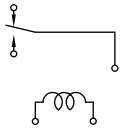


832HA

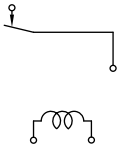
Wiring Diagram

BOTTOM VIEW

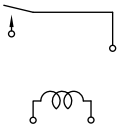
1C



1B



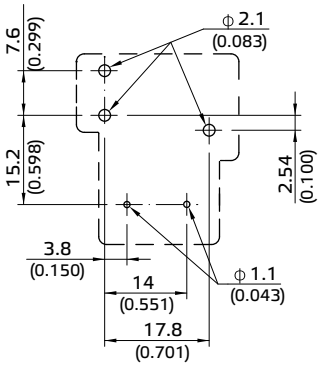
1A



PC Board Layout

BOTTOM VIEW

◆832HA



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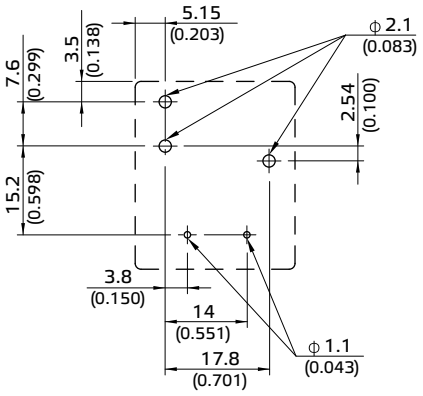


SCLD, SCLB

Features

- 5A general purpose Power Relay.
- DPDT & 4PDT contact configurations.
- AC & DC coil.
- Epoxy sealed type and or flux free type.
- Optional to be equipped with lamp, stud, diode, flashed contact, and flanged cover.
- Comply with RoHS-Directive 2011/65/EU.

Type List

Terminal style	Contact form	Designation (provided with)	Enclosure style		
			Straight cover	Flanged cover	Sealed type washable
W (Quick terminal)	4PDT	-------	SCLD-W-B-4PDT-C	SCLD-W-B-4PDT-C1	SCLD-W-B-4PDT-S
	DPDT		SCLB-W-DPDT-C	SCLB-W-DPDT-C1	SCLB-W-DPDT-S
	4PDT	Diode	SCLD-W-B-D-4PDT-C	SCLD-W-B-D-4PDT-C1	SCLD-W-B-D-4PDT-S
	DPDT		SCLB-W-D-DPDT-C	SCLB-W-D-DPDT-C1	----------
	4PDT	Au plating contact	SCLD-W-B-F-4PDT-C	SCLD-W-B-F-4PDT-C1	SCLD-W-B-F-4PDT-S
	DPDT		SCLB-W-F-DPDT-C	SCLB-W-F-DPDT-C1	----------
	4PDT	Stud	SCLD-W-B-G-4PDT-C	SCLD-W-B-G-4PDT-C1	SCLD-W-B-G-4PDT-S
	DPDT		SCLB-W-G-DPDT-C	----------	----------
	4PDT	Lamp	SCLD-W-B-L-4PDT-C	SCLD-W-B-L-4PDT-C1	SCLD-W-B-L-4PDT-S
	DPDT		SCLB-W-L-DPDT-C	SCLB-W-L-DPDT-C1	----------
P (PCB terminal)	4PDT	-------	SCLD-P-B-4PDT-C	----------	SCLD-P-B-4PDT-S
	DPDT		SCLB-P-DPDT-C	----------	----------
	4PDT	Diode	SCLD-P-B-D-4PDT-C	----------	SCLD-P-B-D-4PDT-S
	DPDT		SCLB-P-D-DPDT-C	----------	----------
	4PDT	Au plating contact	SCLD-P-B-F-4PDT-C	----------	SCLD-P-B-F-4PDT-S
	DPDT		SCLB-P-F-DPDT-C	----------	----------
	4PDT	Stud	SCLD-P-B-G-4PDT-C	----------	SCLD-P-B-G-4PDT-S
	DPDT		SCLB-P-G-DPDT-C	----------	----------
	4PDT	Lamp	SCLD-P-B-L-4PDT-C	----------	SCLD-P-B-L-4PDT-S
	DPDT		SCLB-P-L-DPDT-C	----------	----------
	4PDT	Manual	SCLD-P-B-M-4PDT-C	----------	----------
	DPDT		SCLB-P-M-DPDT-C	----------	----------

Ordering Information

SCL	B	P	-	B	-	L	-	DPDT	-	C1	XXVXC
1	2	3		4		5		6		7	8

SCLD, SCLB

1. SCL -- Basic series designation

2. B -- Double pole
   D -- Four pole

3. P -- PCB terminal
   W -- Quick terminal

4. Blank -- Without any special features
   B -- Provided with contact barrier

5. Blank -- No special features
   D -- Diode across coil
   F -- Ag contact with Au plating - 3A rating
   G -- Provided with stud secured to base
   L -- Provided with pilot light
   M -- Provided with manual operator

6. DPDT -- Double pole double throw
   4PDT -- Four pole double throw

7. Blank -- Open type
   C -- Straight cover
   C1 -- Flanged cover
   S -- Sealed type washable

8. XXVXC -- Coil voltage (please refer to the coil rating data for the availability).

Contact Rating

Resistive load	5A 28VDC	General Use	5A 250VAC

Coil Rating (DC)

Rated voltage (V)	Rated current ±10 % at 23ºC (mA)	Coil resistance ±10 % at 23ºC (Ω)	Max. continuous voltage at 70ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
6	150	40	110 % of rated voltage	75 % of rated voltage	10 % of rated voltage	approx. 0.9W
12	75	160				
15	60	250				
24	37	650				
48	19	2600				
110	10	11000				
120	11	11000				

Coil Rating (AC)

Rated voltage (V)	Coil resistance ±10 % at 23ºC (Ω)	Max. continuous voltage at 70ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
12	40	110 % of rated voltage	85 % of rated voltage	30 % of rated voltage	approx. 1.2VA
24	160				
100	3400				
110	3400				
115	3400				
120	3400				
220	13600				
230	13600				
240	13600				

SCLD, SCLB

Specification

Contact material	AgNi / AgSnO alloy	
Contact resistance (1)	50 mΩ Max.	
Operate time (1)	25 ms Max.	
Release time (1)	25 ms Max.	
Insulation resistance (1)	100 MΩ Min. (DC 500V)	
Dielectric strength (1)	Between open contact : AC 500V , 50/60Hz 1 min.	
	Between contact and coil : AC 1500V , 50/60Hz 1 min.	
	Between contact circuits : AC 1500V , 50/60Hz 1 min.	
Vibration resistance	Operating extremes	10~55Hz , amplitude 1.0 mm
	Damage limits	10~55Hz , amplitude 1.0 mm
Shock resistance	Operating extremes	20G
	Damage limits	100G
Life expectancy	Mechanical	10,000,000 operations (frequency 18,000 operations/hr)
	Electrical	100,000 operations (frequency 1,800 operations/hr)
Operating ambient temperature	-25~+70ºC (no freezing)	
Weight	Approx. 35 g (LD)、32 g (LB)	

Note：(1) initial value

Safety Approval

Certified	UL	CSA	TUV	FIMKO
File No.	E88991	1474292	R3-09452080	24562

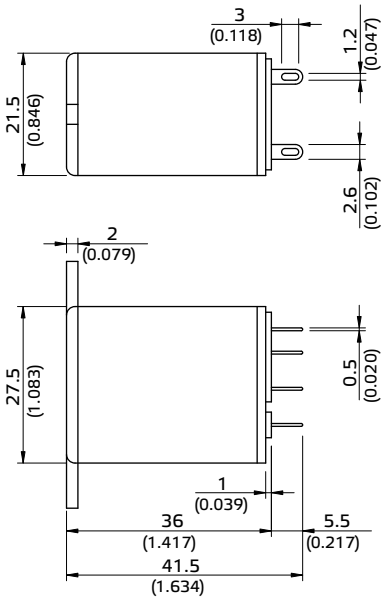
Safety Approval Rating

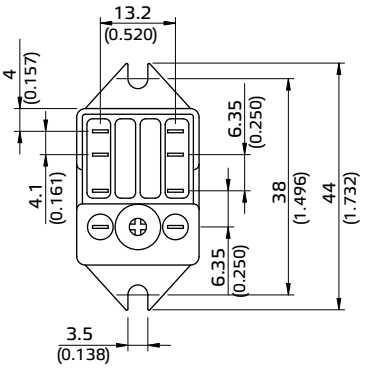
UL	CSA	UL & CSA (-F)	TUV	FIMKO
5A 250VAC 5A 28VDC 1/8HP 3.8FLA,120VAC	5A 250VAC 5A 28VDC	3A 250VAC 3A 30VDC	5A 250VAC 5A 30VDC	5A 250VAC

SCLD, SCLB

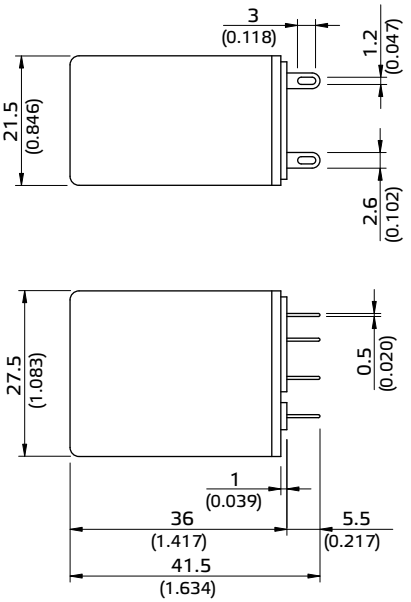
Outline Dimensions

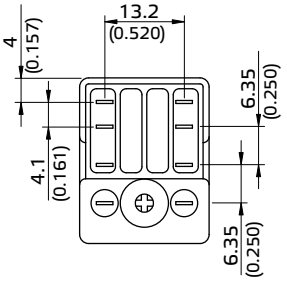
◆LB-W C1



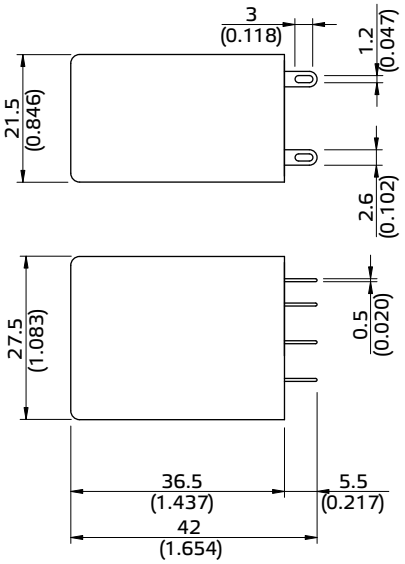


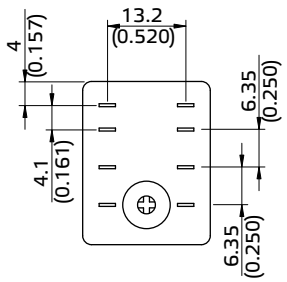
◆LB-W C





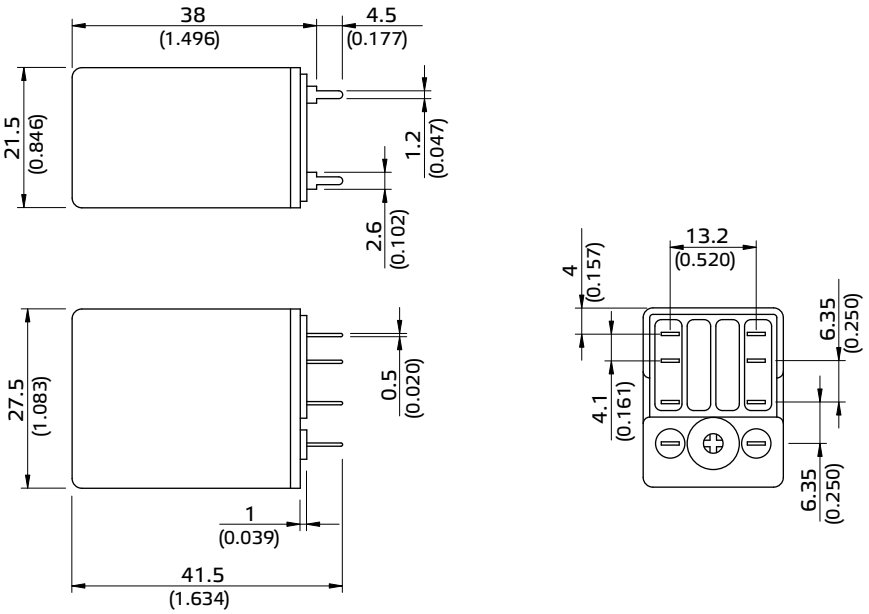
◆LB-W S



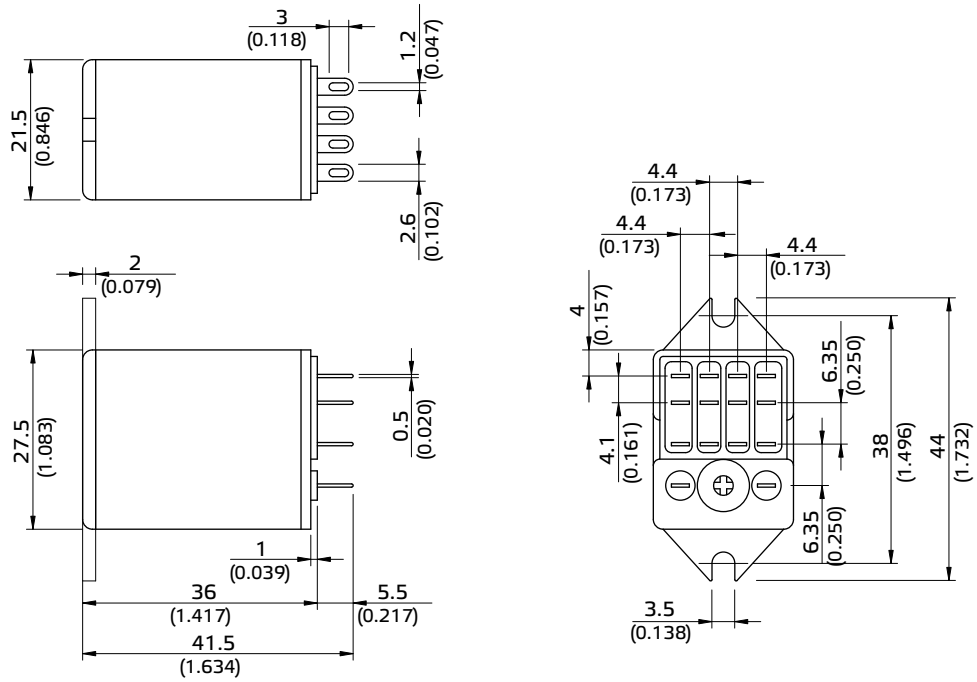


SCLD, SCLB

◆LB-P C

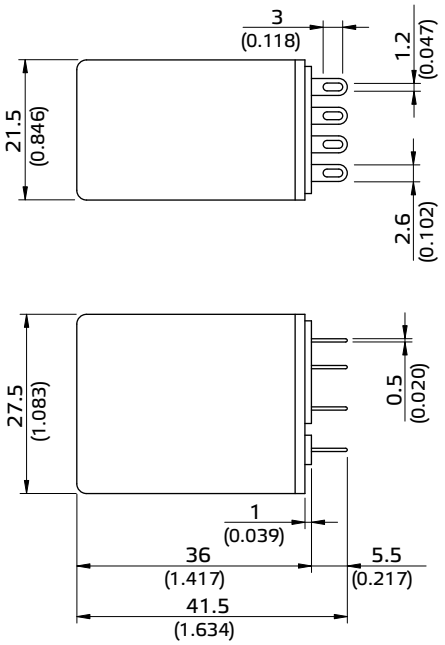


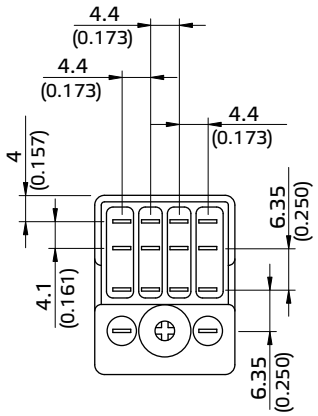
◆LD-W C1



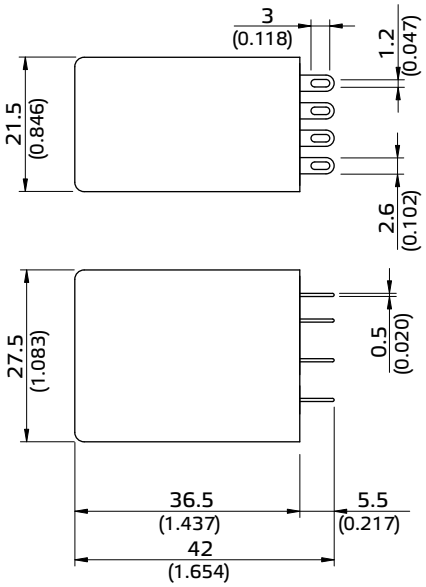
SCLD, SCLB

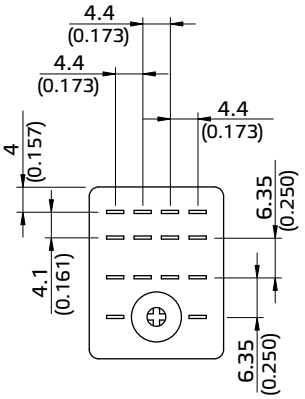
◆LD-W C



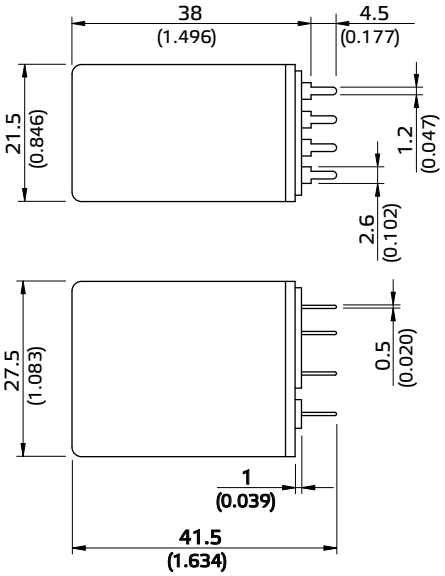


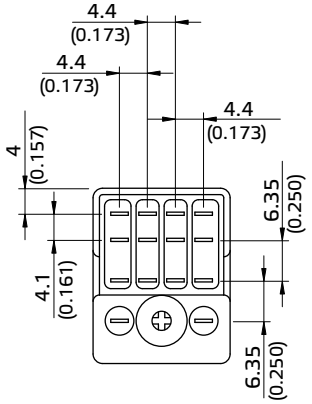
◆LD-W S





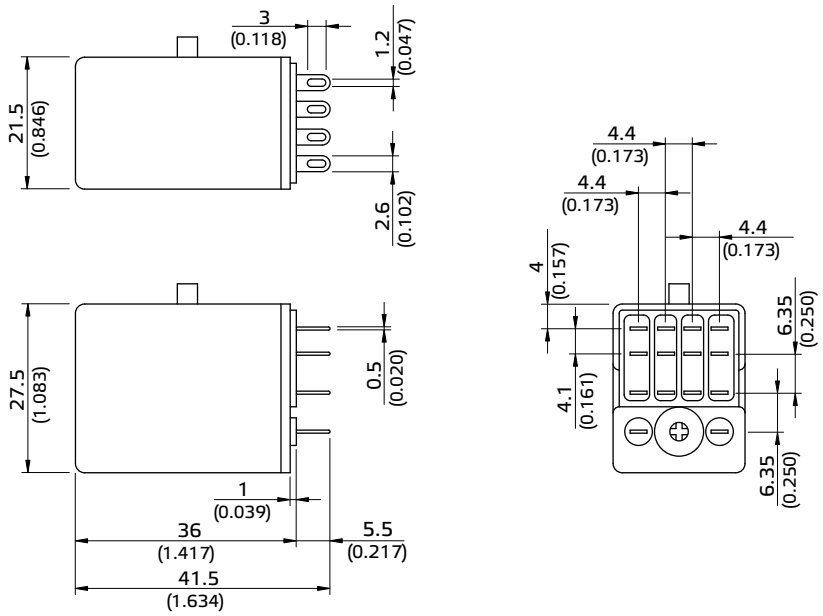
◆LD-P C





SCLD, SCLB

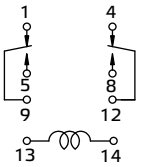
◆LD-W M



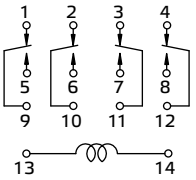
Wiring Diagram

BOTTOM VIEW

DPDT



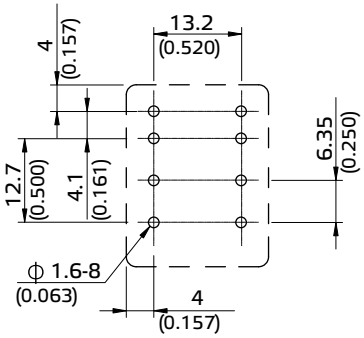
4PDT



PC Board Layout

BOTTOM VIEW

DPDT



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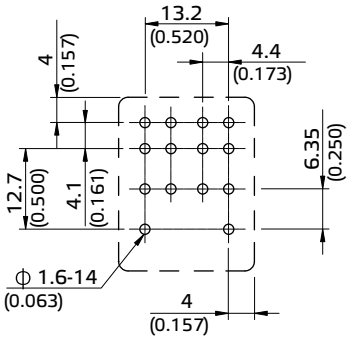
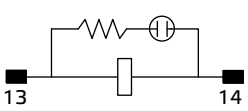


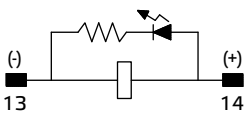
Designation(Provided with)

BOTTOM VIEW

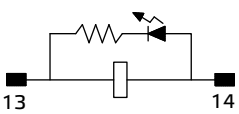
Lamp



(100~240VAC)

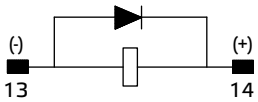


(6~48VDC)



(6~48VAC)

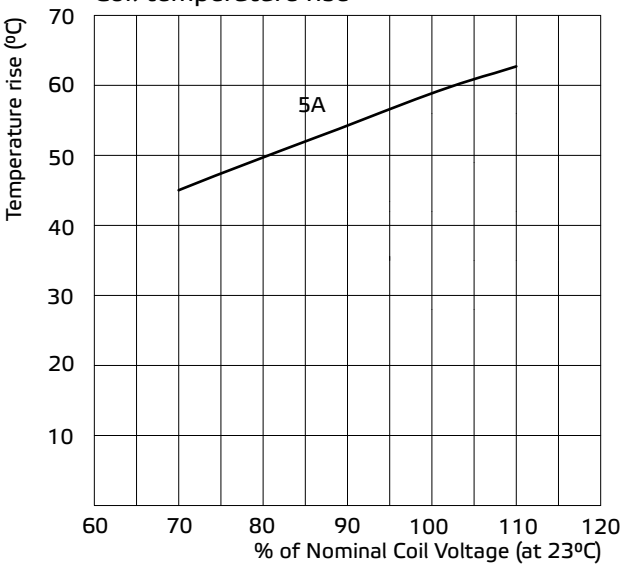
Diode



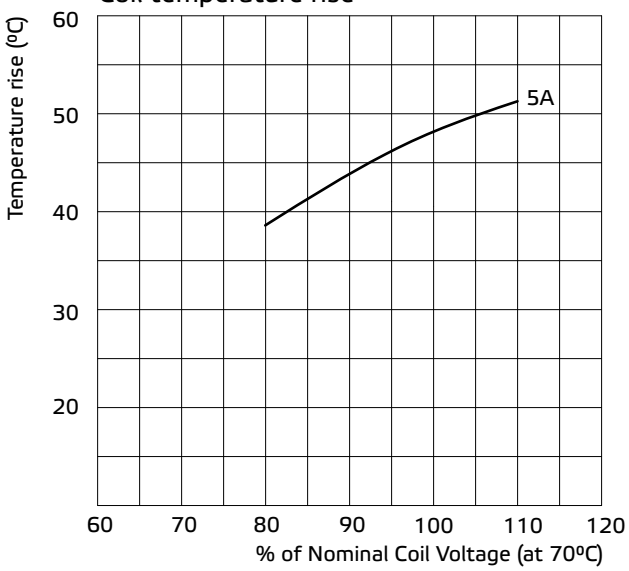
SCLD, SCLB

Engineering Data

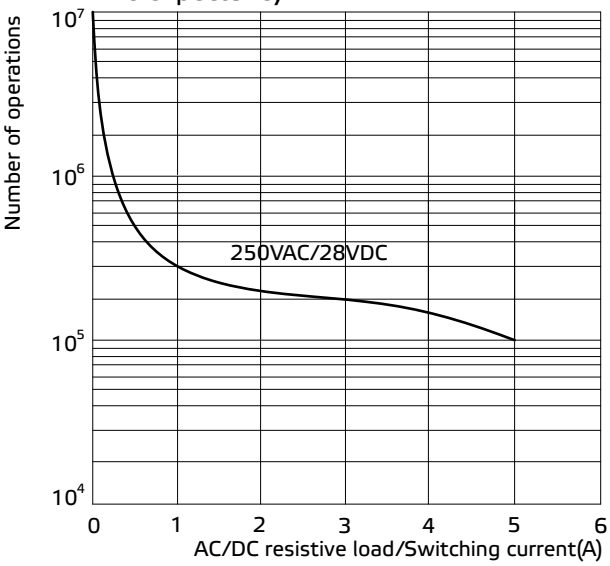
Coil temperature rise



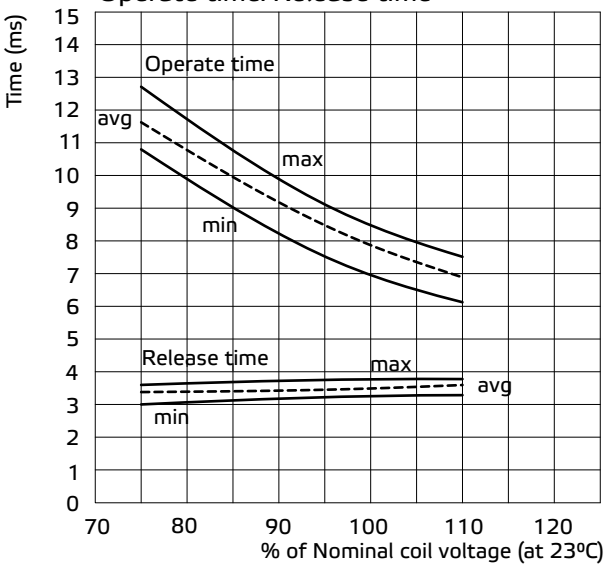
Coil temperature rise



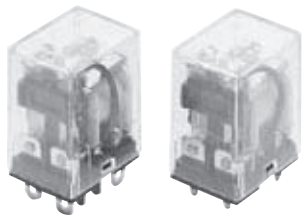
Life expectancy



Operate time/Release time



SCL



Features

- 10 general purpose Power Relay.
- Contact rating up to 12A 250VAC (DPNO).
- Epoxy sealed type and flux free.
- Quick connect terminal or PCB terminal available.
- Special version of larger contact gap 1.9mm (IEC 255/VDE 0436) (DPNO Only).
- Optional to be equipped with lamp, stud, diode, flashed contact, and flanged cover.
- Comply with RoHS-Directive 2011/65/EU.

Type List

Terminal style	Contact form	Designation (provided with)	Enclosure style		
			Straight cover	Flanged cover	Sealed type washable
Quick terminal	DPDT	------	SCL-DPDT	SCL-DPDT-C1	SCL-DPDT-S
	DPNO		SCL-DPNO	SCL-DPNO-C1	SCL-DPNO-S
	DPDT	Diode	SCL-D-DPDT	SCL-D-DPDT-C1	SCL-D-DPDT-S
	DPNO		SCL-D-DPNO	SCL-D-DPNO-C1	SCL-D-DPDT-S
	DPDT	Stud	SCL-G-DPDT	SCL-G-DPDT-C1	SCL-G-DPNO-S
	DPNO		SCL-G-DPNO	SCL-G-DPNO-C1	SCL-G-DPNO-S
	DPDT	Lamp	SCL-L-DPDT	SCL-L-DPDT-C1	SCL-L-DPDT-S
	DPNO		SCL-L-DPNO	SCL-L-DPNO-C1	SCL-L-DPNO-S
PCB terminal	DPDT	------	SCL-1-DPDT	----------	SCL-1-DPDT-S
	DPNO		SCL-1-DPNO	----------	SCL-1-DPNO-S
	DPDT	Diode	SCL-1-D-DPDT	----------	SCL-1-D-DPDT-S
	DPNO		SCL-1-D-DPNO	----------	SCL-1-D-DPNO-S
	DPDT	Stud	SCL-1-G-DPDT	----------	SCL-1-G-DPDT-S
	DPNO		SCL-1-G-DPNO	----------	SCL-1-G-DPNO-S
	DPDT	Lamp	SCL-1-L-DPDT	----------	SCL-1-L-DPDT-S
	DPNO		SCL-1-L-DPNO	----------	SCL-1-DPNO-S
	DPDT	Manual	SCL-1-M-DPDT	----------	----------
	DPNO		SCL-1-M-DPNO	----------	----------

Ordering Information

SCL (1) - 1 (2) - L (3) - DPDT (4) - F (5) - C1 (6) XXVXC (7)

1. SCL -- Basic series designation

2. Blank -- Quick terminal
   1 -- PCB terminal

3. Blank -- Without special features
   L -- Provided with pilot light
   D -- Diode across coil
   G -- Provided with stud secured to base
   M -- Provided with manual operator
   H -- 2 mm contact gap (For DPNO and DC coil type only)

4. DPDT -- Double pole double throw
   DPNO --Double pole normally open

5. Blank -- Standard type
   F -- Class F

6. Blank -- Straight c over
   C1 -- Flanged cover
   S -- Sealed type washable

7. XXVXC -- Coil voltage (please refer to the coil rating data for the availability).

Contact Rating

Resistive load	10A 240VAC , 10A 28VDC	(-H) 15A 240VAC.

Coil Rating (DC)

◆Standard Type

Rated voltage (V)	Rated current ±10 % at 23ºC (mA)	Coil resistance ±10 % at 23ºC (Ω)	Max. continuous voltage at 70ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
6	150	40	110 % of rated voltage	75 % of rated voltage	10 % of rated voltage	approx. 0.9W
9	100	90				
12	75	160				
15	60	250				
24	37	650				
48	19	2600				
60	15	4000				
110	10	11000				
120	11	11000				

◆SCL-H Type

Rated voltage (V)	Rated current ±10 % at 23ºC (mA)	Coil resistance ±10 % at 23ºC (Ω)	Max. continuous voltage at 70º C	Pick up voltage(Max) at 23º C	Drop out voltage(Min) at 23º C	Power consumption at rated voltage
3	400	7.5	115 % of rated voltage	80 % of rated voltage	10 % of rated voltage	approx. 1.2W
6	200	30				
9	133.3	67.5				
12	100	120				
24	50	480				
48	25	1920				
60	20	3000				
100	12	8330				
110	10.9	10080				
120	10	12000				

SCL

Coil Rating (AC)

Rated voltage (V)	Coil resistance ±10 % at 23°C (Ω)	Max. continuous voltage at 70°C	Pick up voltage(Max) at 23°C	Drop out voltage(Min) at 23°C	Power consumption at rated voltage
12	40	110 % of rated voltage	85 % of rated voltage	30 % of rated voltage	approx. 1.2VA
24	160				
100	3400				
110	3400				
115	3400				
120	3400				
220	13600				
230	13600				
240	13600				

Specification

Contact material	AgSnO alloy	
Contact resistance (1)	30 mΩ Max.	50 mΩ Max. (H)
Operate time(1)	25 ms Max.	
Release time (1)	25 ms Max.	
Insulation resistance(1)	100 MΩ Min. (DC 500V)	
Dielectric strength(1)	Between open contact : AC 1000V , 50/60Hz 1 min.	
	Between contact and coil : AC 1500V , 50/60Hz 1 min.	
	Between contact circuits : AC 1500V , 50/60Hz 1 min.	
Vibration resistance	Operating extremes	10~55Hz , amplitude 1.0 mm
	Damage limits	10~55Hz , amplitude 1.0 mm
Shock resistance	Operating extremes	20G 10G(H)
	Damage limits	100G
Life expectancy	Mechanical	10,000,000 operations ; 3,000,000 ops.(H) (frequency 18,000 operations/hr)
	Electrical	100,000 operations (frequency 1,800 operations/hr)[1,200 ops/hr(H)]
Operating ambient temp.	-25～+70°C(no freezing)	
Weight	Approx. 35 g	

Note：(1) initial value

Safety Approval

Certified	UL / CUL	CSA	TUV	FIMKO
File No.	E88991	1474290	R50055516	24561

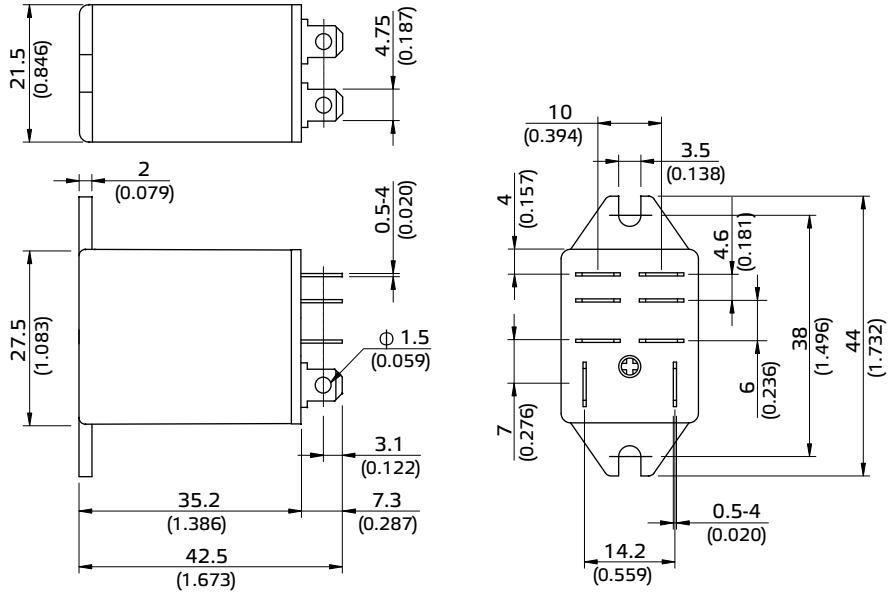
SCL

Safety Approval Rating

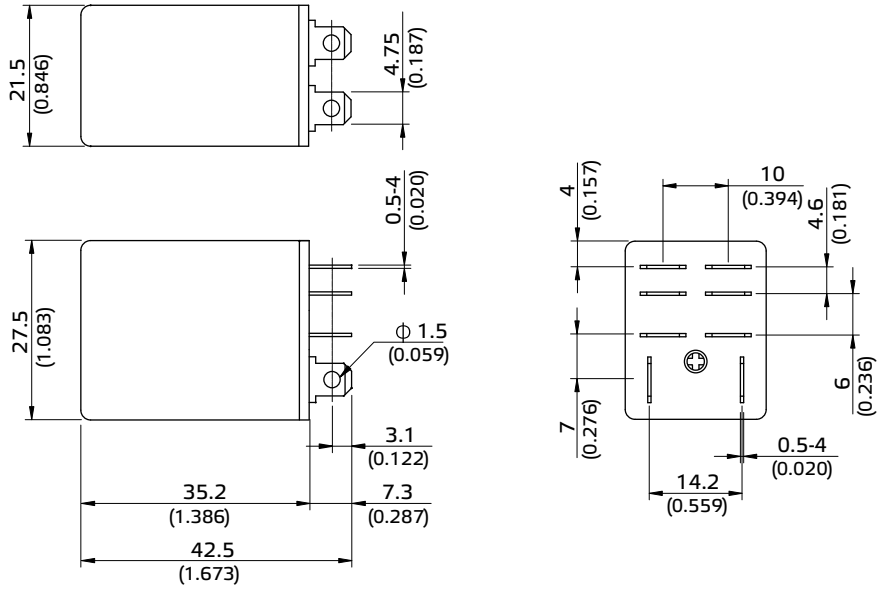
UL / CUL	CSA	TUV	FIMKO
10A 277VAC/28VDC 15A 125VAC 1/3HP 7.5FLA 125VAC 1/2HP 5.0FLA 250VAC 1/3HP 3.0FLA 277VAC 15A 240VAC (DPNO ONLY) 16A 277VAC (H)	10A 277VAC 10A 28VDC 1/2HP 7.5FLA 125VAC 1/3HP 5.0FLA 240VAC 15A 240VAC (DPNO ONLY)	10A 250VAC 10A 30VDC 15A 250VAC (H)	10A 250VAC (DPDT) 15A 250VAC(DPNO)

Outline Dimensions

◆SCL (C1)

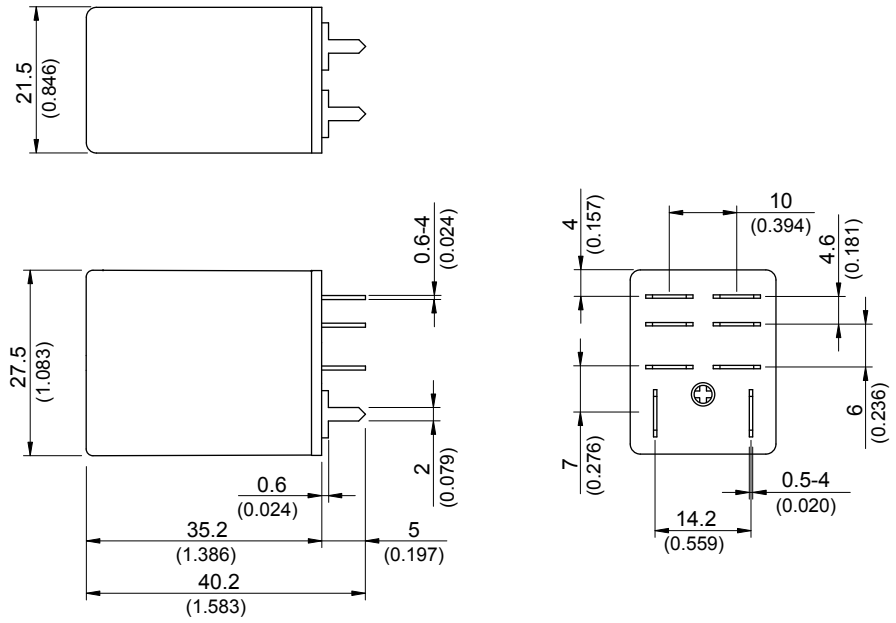


◆SCL



SCL

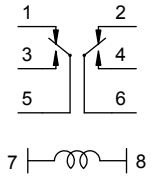
◆SCL-1



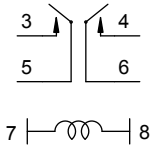
Wiring Diagram

BOTTOM VIEW

DPDT

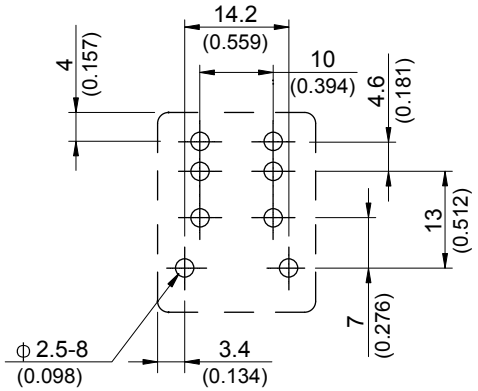


DPNO



PC Board Layout

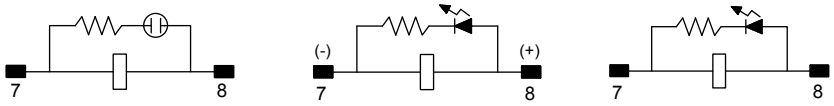
BOTTOM VIEW



Designation(Provided with)

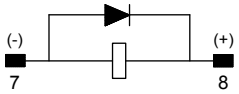
BOTTOM VIEW

Lamp



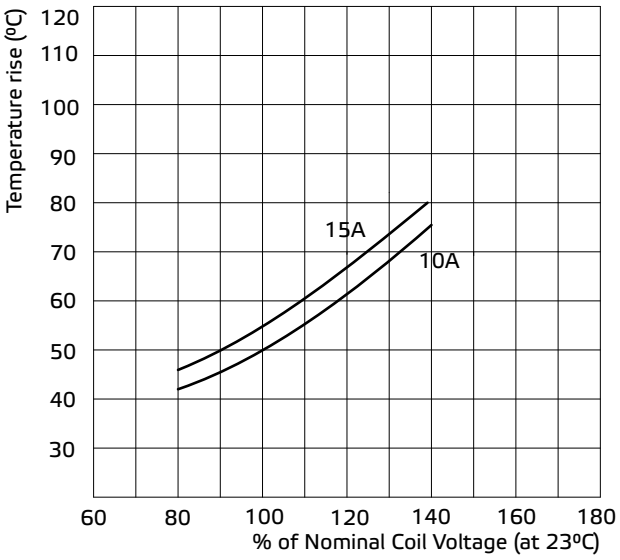
(100~240VAC) (6~48VDC) (6~48VAC)

Diode

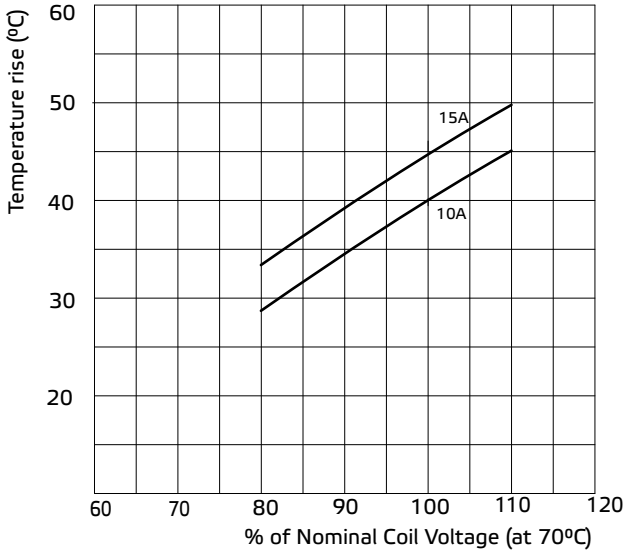


Engineering Data

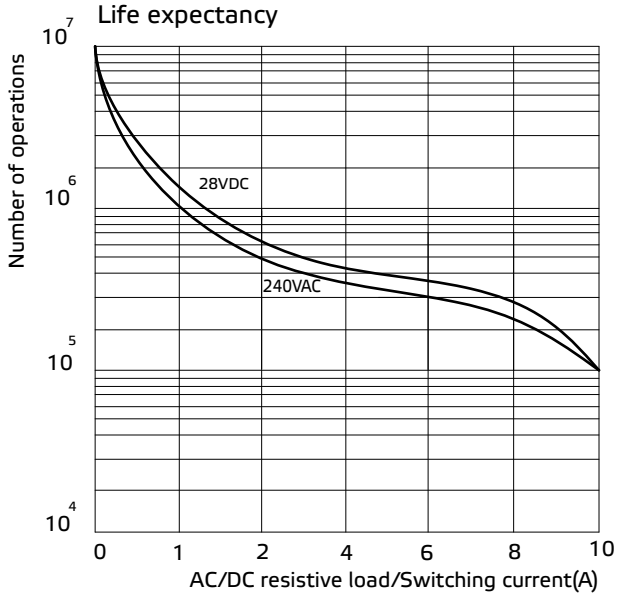
Coil temperature rise



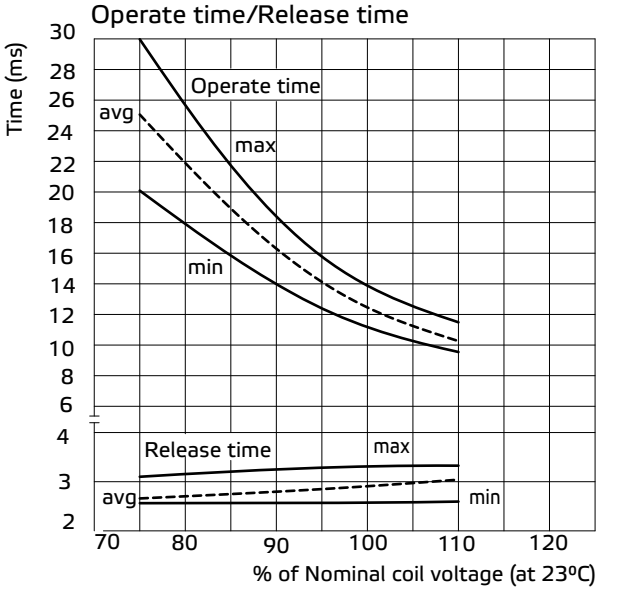
Coil temperature rise



Life expectancy



Operate time/Release time



731

Features

- 10A general purpose Power Relay.
- Both available 0.25 and 0.187 terminals.
- SPDT, DPDT, TPDT contact configurations.
- AC & DC coils are both available
- Optional for anti-rotation-tab, tapped core, indicator, lamp & push-to-test button, flanged cover.
- Comply with RoHS-Directive 2011/65/EU.

Type List

◆731

Terminal style	Contact form	Enclosure style				
		Open type	Dust cover	Ears on cover	Antirotation -tab	Ears on top
Quick terminal	1A(SPNO)	731-SPNO	731-SPNO-C	731-SPNO-C1	731-SPNO-C2	731-SPNO-C3
	1C (SPDT)	731-SPDT	731-SPDT-C	731-SPDT-C1	731-SPDT-C2	731-SPDT-C3
	2A (DPNO)	731-DPNO	731-DPNO-C	731-DPNO-C1	731-DPNO-C2	731-DPNO-C3
	2C (DPDT)	731-DPDT	731-DPDT-C	731-DPDT-C1	731-DPDT-C2	731-DPDT-C3
	3A (TPNO)	731-TPNO	731-TPNO-C	731-TPNO-C1	731-TPNO-C2	731-TPNO-C3
	3C (TPDT)	731-TPDT	731-TPDT-C	731-TPDT-C1	731-TPDT-C2	731-TPDT-C3

◆731H

Terminal style	Contact form	Enclosure style		
		Dust cover	Ears on cover	Ears on top
Quick terminal	1A (SPNO)	731H-SPNO-C	731H-SPNO-C1	731H-SPNO-C3
	1C (SPDT)	731H-SPDT-C	731H-SPDT-C1	731H-SPDT-C3
	2A (DPNO)	731H-DPNO-C	731H-DPNO-C1	731H-DPNO-C3
	2C (DPDT)	731H-DPDT-C	731H-DPDT-C1	731H-DPDT-C3
	3A (TPNO)	731H-TPNO-C	731H-TPNO-C1	731H-TPNO-C3
	3C (TPDT)	731H-TPDT-C	731H-TPDT-C1	731H-TPDT-C3

Ordering Information

731	H	-	TPDT	-	C	M	-	F	XXVXC
1	2		3		4	5		6	7

1. 731 -- Basic series designation

2. Blank -- Standard type
   H -- High power type

3. SPDT -- Single pole double throw
   SPNO -- Single pole normally open
   SPNC -- Single pole normally closed
   DPDT -- Double pole double throw
   DPNO -- Double pole normally open
   DPNC -- Double pole normally closed
   TPDT -- Three pole double throw
   TPNO -- Three pole normally open
   TPNC -- Three pole normally closed

4. Blank -- Open type without frame tab
   C -- With cover
   C1 -- With mounting ears on cover
   C2 -- With accessible mounting hole with anti-rotation tab
   C3 -- Mounting Ears on top of cover
   X -- Open type with frame tab
5. M -- With manual operator
   T -- Printed circuit board terminals
   L -- Pilot lamp
6. Blank -- Standard type
   F -- Class F
7. XXVXC -- Coil voltage (please refer to the coil rating data for the availability)

Contact Rating

	731	731H 1P、2P	731H 3P
Resistive load	10A 28VDC 10A 240VAC	20A 300VAC 25A 277VAC	16A 300VAC 20A 277VAC

Coil Rating (DC)

Rated voltage (V)	Rated current ±10 % at 23°C (mA)	Coil resistance ±10 % at 23°C (Ω)	Max. continuous voltage at 70°C	Pick up voltage(Max) at 23°C	Drop out voltage(Min) at 23°C	Power consumption at rated voltage
6	188	32	140 % of rated voltage	75 % of rated voltage	10 % of rated voltage	approx. 1.2W
12	100	120				
24	51	472				
48	27	1800				
110	11	10000				
120	12	10000				

Coil Rating (AC)

Rated voltage (V)		Coil resistance ±10 % at 23°C (Ω)	Max. continuous voltage at 70°C	Pick up voltage(Max) at 23°C	Drop out voltage(Min) at 23°C	Power consumption at rated voltage
SP DP	12	21	110 % of rated voltage	85 % of rated voltage	30 % of rated voltage	approx. 2.0VA
	24	85				
	110	1700				
	115	1700				
	120	2250				
	220	7200				
	230	7200				
	240	9110				

731

Coil Rating (AC)

Rated voltage (V)		Coil resistance ±10 % at 23ºC (Ω)	Max. continuous voltage at 70ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
TP	12	18	110 % of rated voltage	85 % of rated voltage	30 % of rated voltage	approx. 2.7VA
	24	72				
	110	1300				
	115	1300				
	120	1700				
	220	5600				
	230	5600				
	240	7200				

Specification

Contact material	AgSnO alloy		
Contact resistance(1)	50 mΩMax. (for 731)	100 mΩ Max. (for 731H)	
Operate time(1)	20 ms Max.		
Release time (1)	20 ms Max.		
Insulation resistance(1)	1000 MΩMin. (DC 500V)		
Dielectric strength(1)	Between open contact	: AC 500V , 50/60Hz 1 min. (for 731) : AC 1000V , 50/60Hz 1 min. (for 731H)	
	Between contact and coil	: AC 1500V , 50/60Hz 1 min. (for 731) : AC 2500V , 50/60Hz 1 min. (for 731H)	
	Between contact circuits	: AC 1500V , 50/60Hz 1 min. (for 731) : AC 2500V , 50/60Hz 1 min. (for 731H)	
Vibration resistance	Operating extremes	10~55Hz , amplitude 1.0 mm	
	Damage limits	10~55Hz , amplitude 1.5 mm	
Shock resistance	Operating extremes	10G	
	Damage limits	100G	
Life expectancy	Mechanical	10,000,000 operations (frequency 18,000 ops./hr)	
	Electrical	100,000 operations (frequency 1,200 ops./hr) (for 731) 50,000 operations (frequency 360 ops./hr) (for 731H)	
Operating ambient temperature	-45～+70ºC (no freezing)	(for 731)	
	AC coil : -45～+55ºC (no freezing) DC coil : -45～+65ºC (no freezing)	(for 731H)	
Weight	Approx. 79.2 g		

Note : (1) initial value.

731

Safety Approva

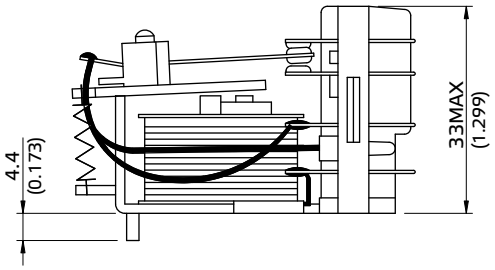
Certified	731			731H
	UL	CSA	FIMKO	UL / CUL
File No.	E88991	1663800	23797	E88991

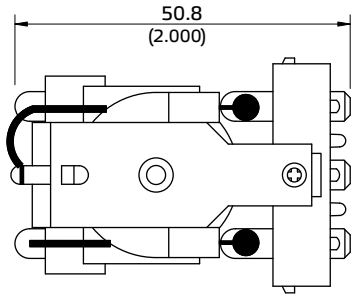
SafetyApproval Rating

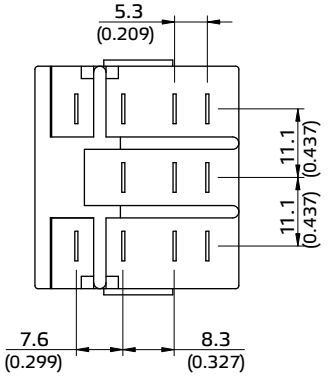
731		731H 1P、2P	731H 3P
UL、CSA	FIMKO	UL / CUL	
10A 240VAC	10A 250VAC	20A 300VAC	16A 300VAC
10A 28VDC		25A 277VAC	20A 277VAC
1/3HP 120VAC		1.5HP 240VAC	1.5HP 240VAC
1/2HP 240VAC		1HP 120VAC	1HP 120VAC

Outline Dimensions

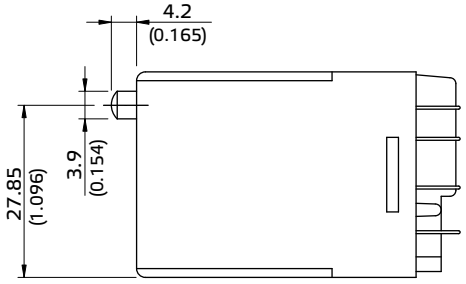
◆731 OPEN

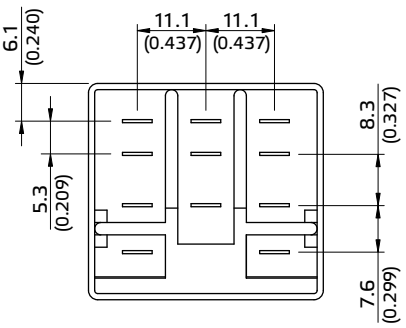






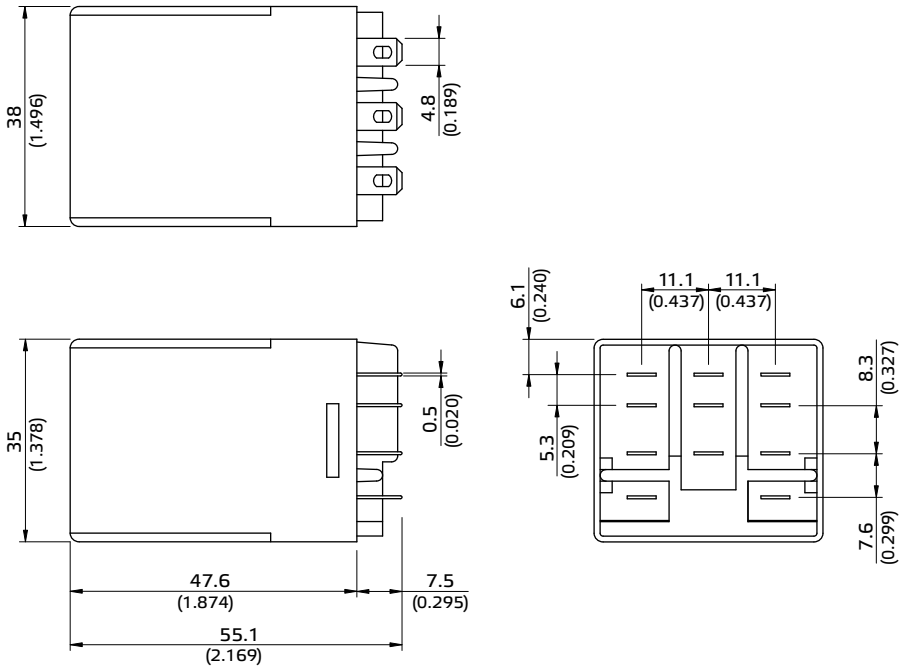
◆731 M



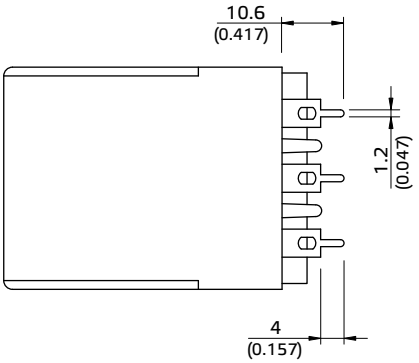


731

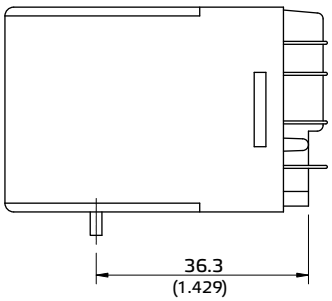
◆731 C



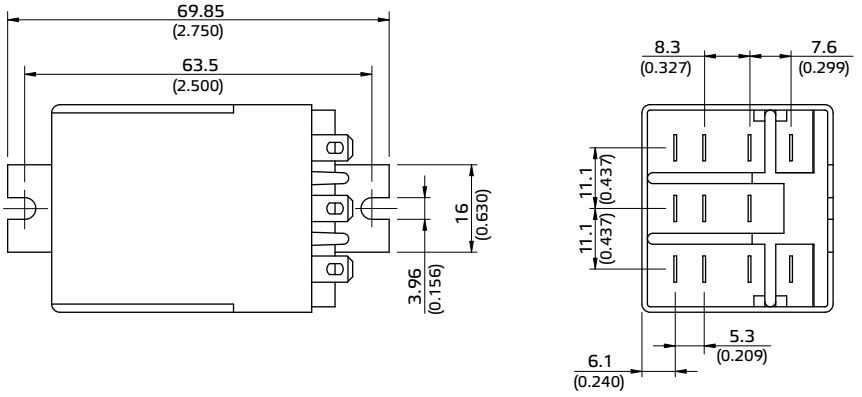
◆731 T



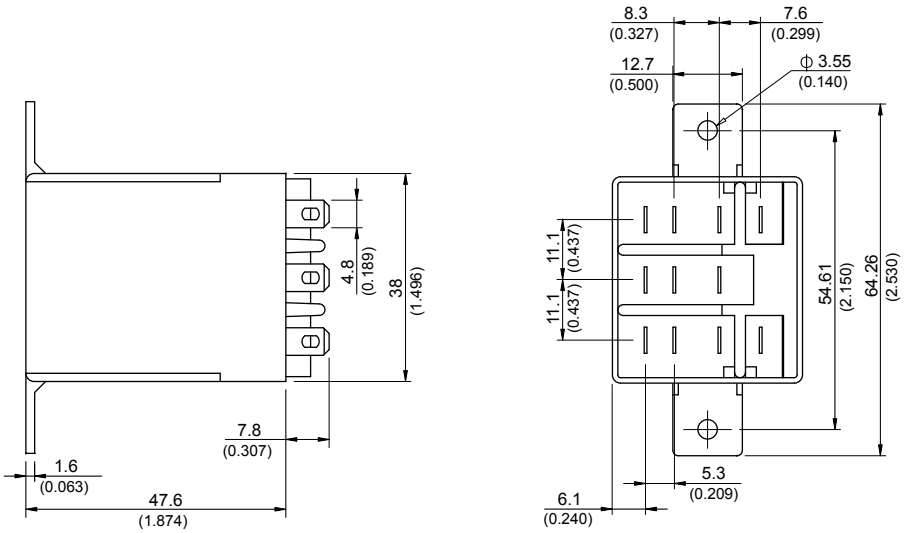
◆731 C2



◆731 C1



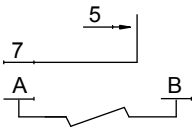
◆731 C3



Wiring Diagram

Bottom New

SPNO



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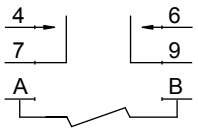
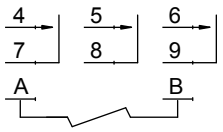
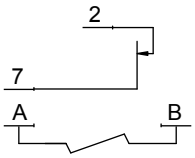


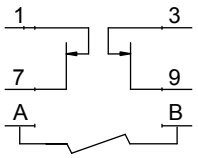
TPNO



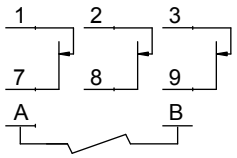
SPNC



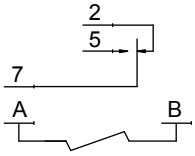
DPNC



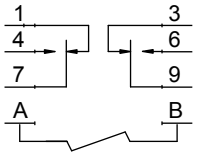
TPNC



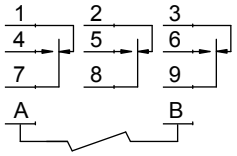
SPDT



DPDT



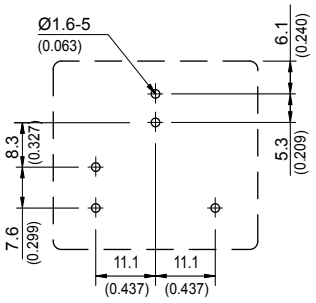
TPDT



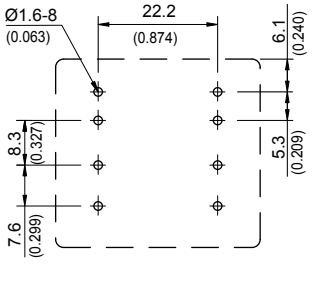
PC Board Layout

Bottom New

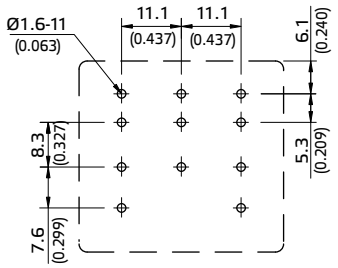
1P



2P

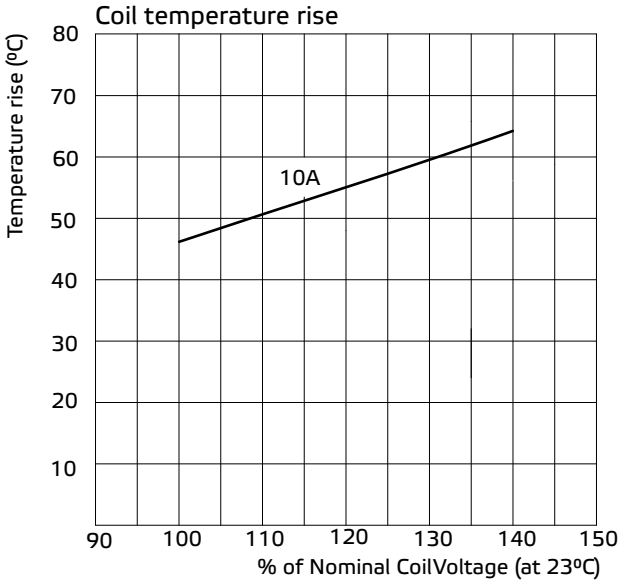


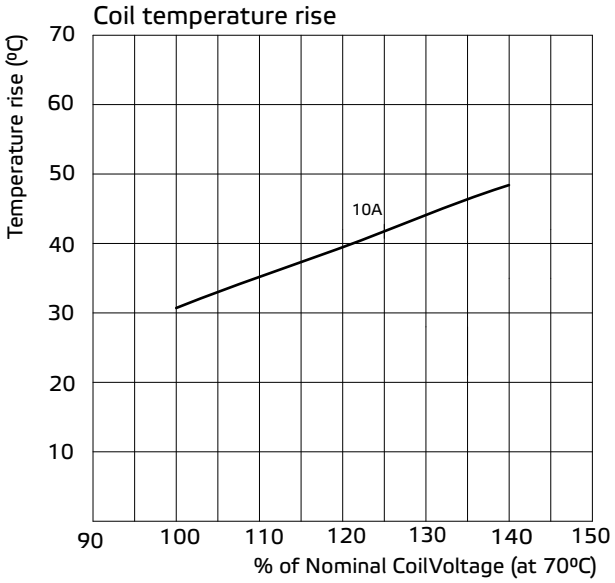
3P

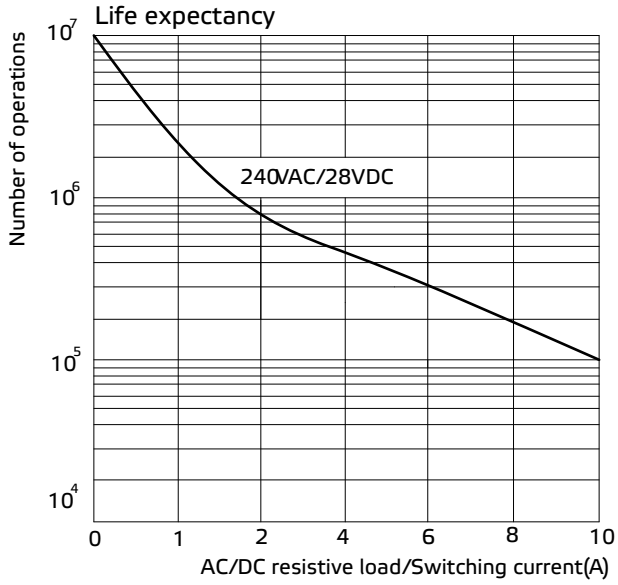


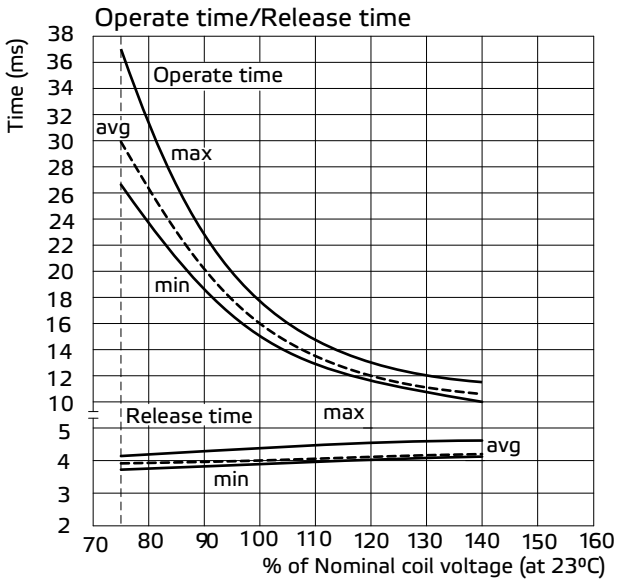
Engineering Data

◆731



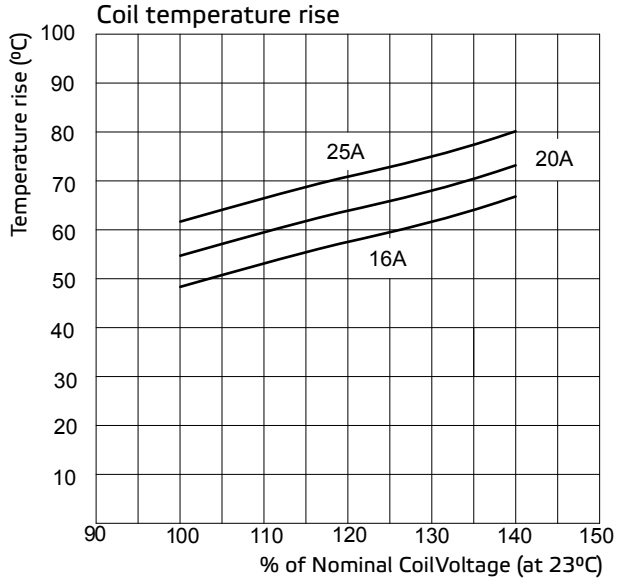




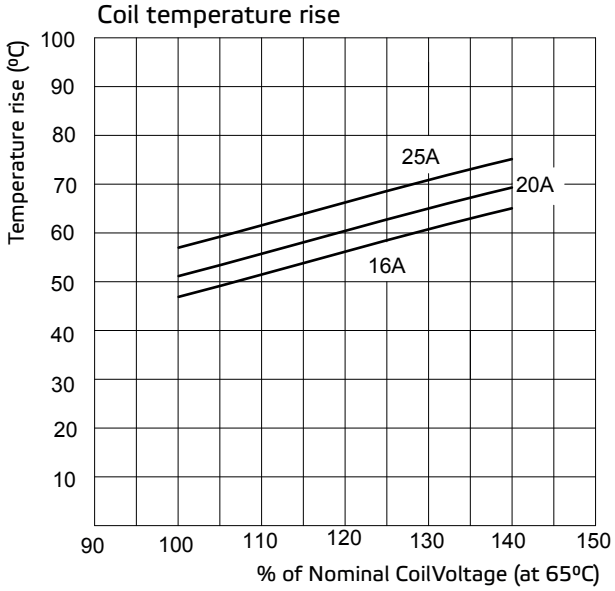


◆731 H

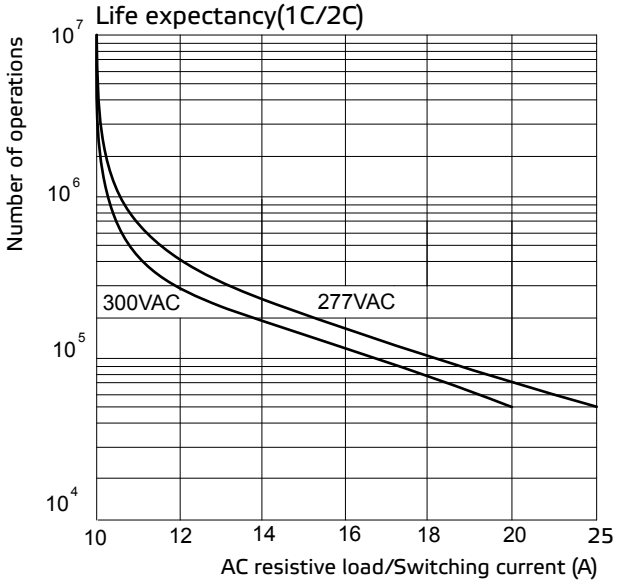
Coil temperature rise



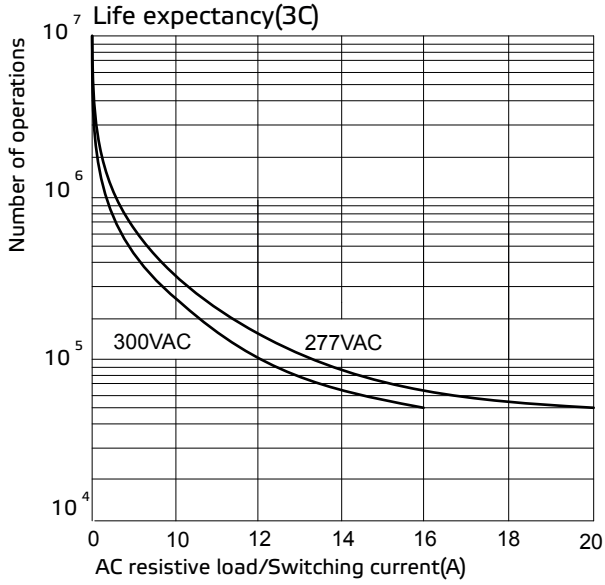
Coil temperature rise



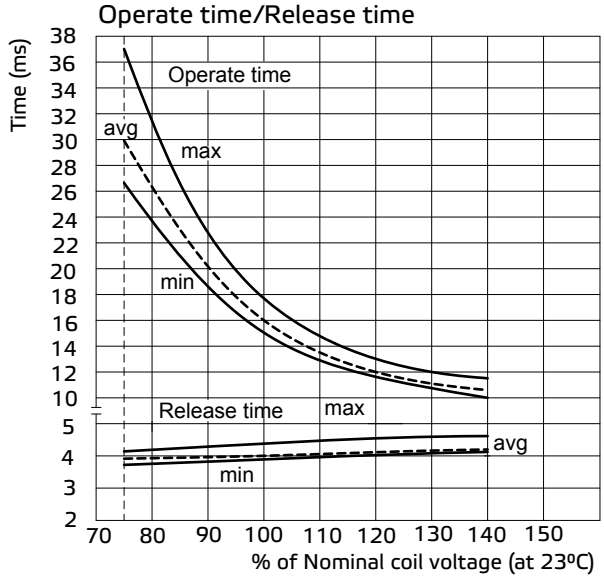
Life expectancy(1C/2C)



Life expectancy(3C)



Operate time/Release time



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Features

- High rating up to 10A for double pole version.
- AC & DC coil are both available.
- Optional for module with diode, LED and RC.
- With position indicator and manual override.
- Comply with RoHS-Directive 2011/65/EU.

Type List

Terminal style	Contact form	Designation (provided with)	Designation (provided with)
			Dust cover with test button
Quick terminal	2C (DPDT)	------	607-2CC-DM
		LED	607-2CC-DM-1
		Diode	607-2CC-DM-2
		Diode & LED	607-2CC-DM-4
		RC	607-2CC-DM-6
		RC & LED	607-2CC-DM-7

Ordering Information

607	-	2C	C	-	DM	-	1	XXVXC
1		2	3		4		5	6

1. 607 -- Basic series designation
2. 2C -- Double pole double throw
3. C (1) -- Contact material AgNi
4. DM -- Dust cover with test button
5. Blank -- Standard type
   - 1 -- Provided with LED
   - 2 -- Provided with diode, the positive pole on A1 terminal (for DC coil)
   - 3 -- Provided with diode, the negative pole on A1 terminal (for DC coil)
   - 4 -- Provided with diode & LED, the positive pole on A1 terminal (for DC coil)
   - 5 -- Provided with diode & LED, the negative pole on A1 terminal (for DC coil)
   - 6 -- Provided with RC (for AC coil)
   - 7 -- Provided with RC & LED (for AC coil)
6. XXVXC -- Coil voltage (please refer to the coil rating data for the availability)

Note : (1) Gold plated or AgSnO alloy contact material are available, for the details please contact Song Chuan.

Contact Rating

Rated load	Resistive load	Inductive load (cosØ=0.3 L/R=7ms)
	10A 250VAC, 10A 30VDC	7.5A 250VAC, 6A 30VDC
Max. switching current	12A	
Max. switching voltage	277VAC	
Max. switching capacity	3000VA	
Min. switching current (1)	5VDC 10mA (for reference value)	

Note : (1) Failure rate level P.

Coil Rating (DC)

Rated voltage (V)	Rated current ±10 % at 23ºC (mA)	Coil resistance ±10 % at 23ºC (Ω)	Max. continuous voltage at 70ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
5	106	47	110 % of rated voltage	75 % of rated voltage	10 % of rated voltage	approx. 0.53W
6	88	68				
12	44	272				
24	22	1,087				
36	14.7	2,445				
48	11	4,347				
100/110	4.8	22,830				
125	4.2	29,481				

Coil Rating (AC)

Rated voltage (V)	Rated current ±10% at 23ºC(mA)		Coil resistance ±10% at 23ºC (Ω)	Max. continuous voltage at 70ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
	50Hz	60Hz					
12	88	75	65	110 % of rated voltage	80 % of rated voltage	30 % of rated voltage	approx. 0.9VA (60Hz)
24	44	37.5	251				
48	22	18.8	1,025				
100/110	9.6	8.2	5,050				
120	8.8	7.5	6,970				
200/220	4.8	4.1	21,200				
230	4.6	3.9	26,120				
240	4.4	3.8	27,760				

Specification

Contact material	AgNi alloy	
Contact resistance(1) (2)	100mΩ Max.	
Operate time(1)	15ms Max.	
Release time(1)	10ms Max. (with diode or R.C：20ms Max)	
Insulation resistance(1)	1000MΩ Min. (DC 500V)	
Dielectric strength(1)	Between open contact : AC 1000V, 50/60Hz 1 min.	
	Between contact and coil : AC 5000V, 50/60Hz 1 min.	
	Between contact circuits : AC 3000V, 50/60Hz 1 min.	
Vibration resistance	Operating extremes	10～55Hz , amplitude 1.5 mm
	Damage limits	10～55Hz , amplitude 1.5 mm
Shock resistance	Operating extremes	NO : 20G, NC : 10G
	Damage limits	100G
Life expectancy	Mechanical	DC coil: 20,000,000 operations (frequency 18,000 operations /hr)
		AC coil: 10,000,000 operations (frequency 18,000 operations /hr)
	Electrical	100,000 operations (frequency 900 operations /hr)
Operating ambient temperature	-40～+70ºC (no freezing)(3)	
Weight	Approx. 21g	

Note : (1) Initial value
(2) Measurement condition : 6VDC 1A (voltage drop method)
(3) Ambient temperature of -40～+85ºC is also available, for the details please contact Song Chuan.

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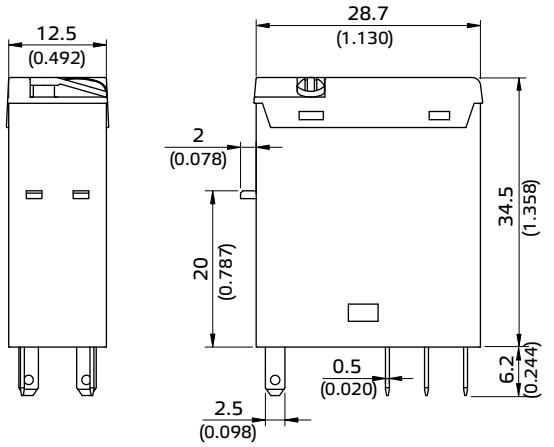
Safety Approval

Certified	UL / CUL
File No.	PENDING

Safety Approval Rating

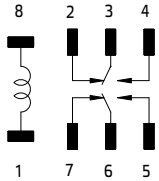
UL /CUL
12A/277VAC
12A/30VDC
B300
R300

Outline Dimensions



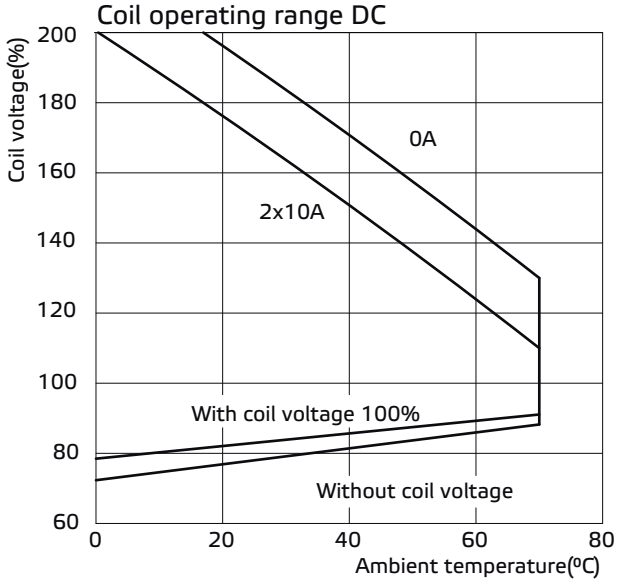
Wiring Diagram

BOTTOM VIEW

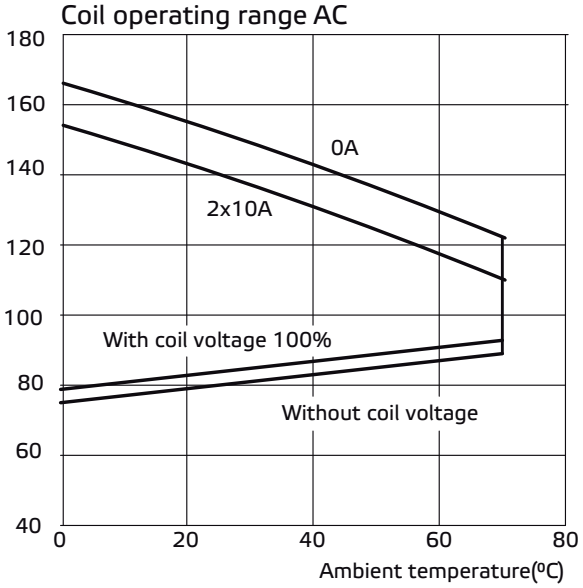


Engineering Data

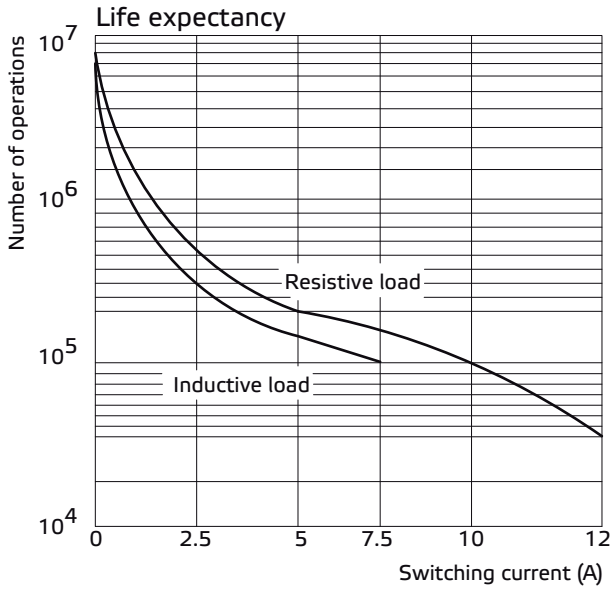
Coil operating range DC



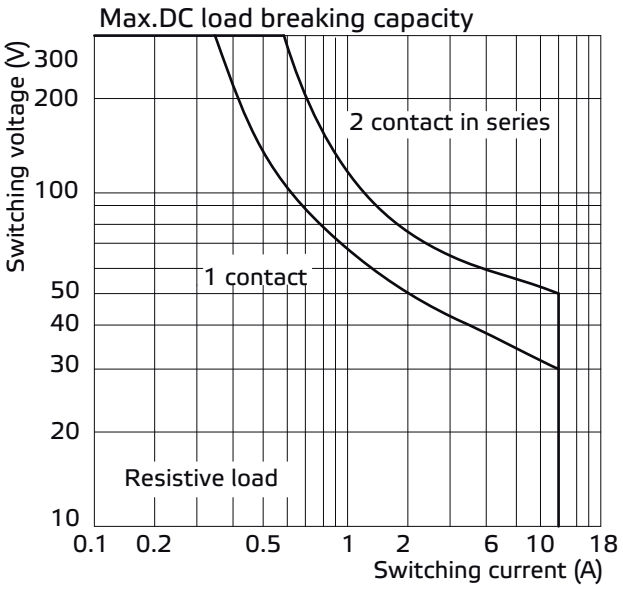
Coil operating range AC



Life expectancy



Max.DC load breaking capacity



SCLA

Features

- 15A general purpose Power Relays.
- UL/CUL, CSA, TUV approved.
- Optional for AC & DC coil.
- Optional with and or w/out lamp, push-to-test button, stud etc.
- Sealed and washable type w/ knock-off nib vent.
- Plain or top flange cover, PCB or solder lug / quick terminals.
- Contact rating up to 15A 250VAC (SPNO)
- Comply with RoHS Directive 2011/65/EU.

Type List

Terminal style	Contact form	Designation (provided with)	Enclosure style	
			Dust cover	Flanged cover
S (Quick terminal)	1C (SPDT)	--------	SCLA-S-SPDT-C	SCLA-S-SPDT-C1
	1A (SPNO)		SCLA-S-SPNO-C	SCLA-S-SPNO-C1
	1B (SPNC)		SCLA-S-SPNC-C	SCLA-S-SPNC-C1
	1C (SPDT)	Lamp	SCLA-S-L-SPDT-C	SCLA-S-L-SPDT-C1
	1A (SPNO)		SCLA-S-L-SPNO-C	SCLA-S-L-SPNO-C1
	1B (SPNC)		SCLA-S-L-SPNC-C	SCLA-S-L-SPNC-C1
	1C (SPDT)	Manual	SCLA-S-M-SPDT-C	SCLA-S-M-SPDT-C1
	1A (SPNO)		SCLA-S-M-SPNO-C	SCLA-S-M-SPNO-C1
	1B (SPNC)		SCLA-S-M-SPNC-C	SCLA-S-M-SPNC-C1
	1C (SPDT)	Lamp & Manual	SCLA-S-LM-SPDT-C	SCLA-S-LM-SPDT-C1
	1A (SPNO)		SCLA-S-LM-SPNO-C	SCLA-S-LM-SPNO-C1
	1B (SPNC)		SCLA-S-LM-SPNC-C	SCLA-S-LM-SPNC-C1
P (PCBterminal)	1C (SPDT)	--------	SCLA-P-SPDT-C	--------
	1A (SPNO)		SCLA-P-SPNO-C	--------
	1B (SPNC)		SCLA-P-SPNC-C	--------
	1C (SPDT)	Lamp	SCLA-P-L-SPDT-C	--------
	1A (SPNO)		SCLA-P-L-SPNO-C	--------
	1B (SPNC)		SCLA-P-L-SPNC-C	--------
	1C (SPDT)	Manual	SCLA-P-M-SPDT-C	--------
	1A (SPNO)		SCLA-P-M-SPNO-C	--------
	1B (SPNC)		SCLA-P-M-SPNC-C	--------
	1C (SPDT)	Lamp & Manual	SCLA-P-LM-SPDT-C	--------
	1A (SPNO)		SCLA-P-LM-SPNO-C	--------
	1B (SPNC)		SCLA-P-LM-SPNC-C	--------

SCLA

Ordering Information

SCL	A	-	S	-	L	-	SPNO	-	F	-	C	XXVXC
1	2		3		4		5		6		7	8

1. SCL -- Basic series designation
2. A -- Single pole
3. P -- PCB terminal
   S -- Quick terminal
4. Blank -- Without pilot light
   L -- Porvided with pilot light
   M -- Porvided with manual operator
5. SPNO -- Single pole normally open
   SPNC -- Single pole normally closed
   SPDT -- Single pole double throw
6. Blank -- Standard type
   F -- Class F
7. C -- Dust cover
   C1 -- Flanged cover
8. XXVXC -- Coil voltage (please refer to the coil rating data for the availability).

Contact Rating

Resistive load	15A 240VCA 15A 28VDC

Coil Rating (DC)

Rated voltage (V)	Rated current ±10% at 23ºC (mA)	Coil resistance ±10% at 23ºC (Ω)	Max. continuous voltage at 70ºC	Pick up voltage (Max) at 23ºC	Drop out voltage (Min) at 23ºC	Power consumption at rated voltage
6	150	40	120 % of rated voltage	75 % of rated voltage	10 % of rated voltage	approx. 0.9W
12	75	160				
15	60	250				
24	37	650				
48	19	2600				
110	10	11000				
120	11	11000				

Coil Rating (AC)

Rated voltage (V)	Coil resistance ±10% at 23ºC (Ω)	Max. continuous voltage at 70ºC	Pick up voltage (Max) at 23ºC	Drop out voltage (Min) at 23ºC	Power consumption at rated voltage
12	40	110 % of rated voltage	85 % of rated voltage	30 % of rated voltage	approx. 1.2VA
24	160				
100	3400				
110	3400				
115	3400				

SCLA

120	3400	110% of rated voltage	85% of rated voltage	30% of rated voltage	approx. 1.2VA
220	13600				
230	13600				
240	13600				

Specification

Contact material	AgSnO alloy	
Contact resistance (1)	30 mΩ Max.	
Operate time (1)	25 ms Max.	
Release time (1)	25 ms Max.	
Insulation resistance (1)	100 MΩ Min.(DC 500V)	
Dielectric strength (1)	Between live parts & ground : AC 1500V, 50/60Hz 1min.	
	Between contact and coil : AC 1500V, 50/60Hz 1min.	
	Between open contact : AC 1500V, 50/60Hz 1min.	
Vibration resistance	Operating extremes	10 ~ 55Hz, amplitude 1.0 mm
	Damage limits	10 ~ 55Hz, amplitude 1.0 mm
Shock resistance	Operating extremes	20G
	Damage limits	100G
Life expectancy	Mechanical	10,000,000 operations (frequency 18,000 operations/hr)
	Electrical	100,000 operations (frequency 18,000 operations/hr)
Operating ambient temperature	-25~+70°C (no freezing)	
Weight	Approx. 32 g	

Note : (1) initial value

Safety Approval

Certified	UL / CUL	CSA	TUV
File No.	E8899	1474292	R9452081

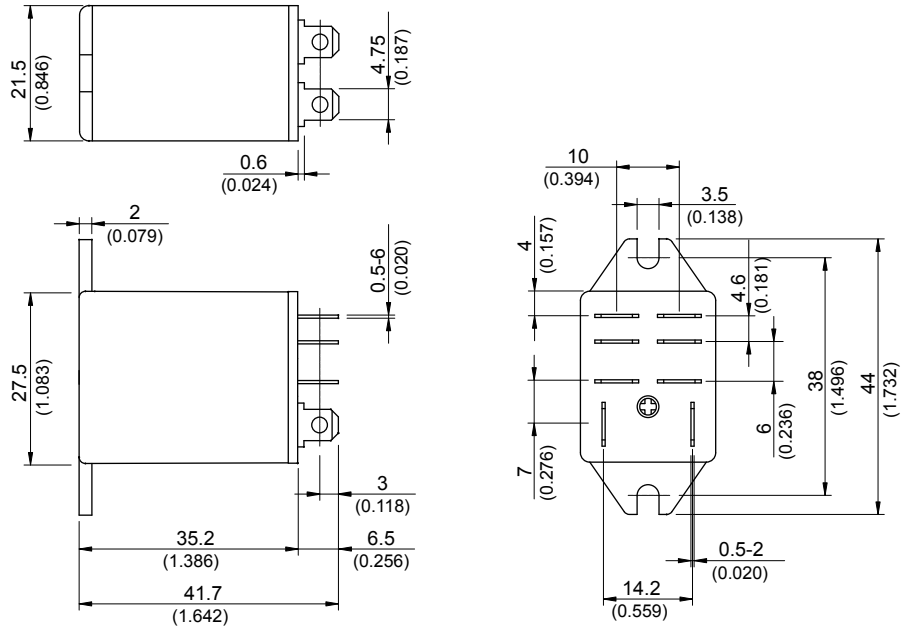
Safety Approval Rating

UL / CUL	CSA	TUV
15A 277VAC (※) 18A 120VAC (※) 15A 120VAC 10A 277VAC 15A 28VDC 1/2HP 120VAC	10A 277VAC 15A 28VDC 15A, 1/2HP 120VAC	15A 250VAC 15A 30VDC 6.2A 120VAC cos ϕ 0.5

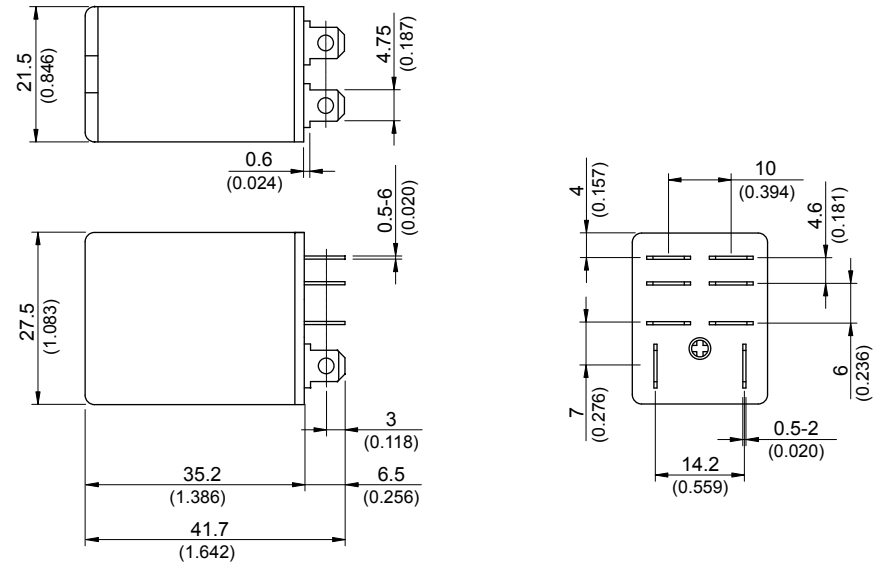
Note : (※)For non industrial application.

Outline Dimensions

◆LA-S C1

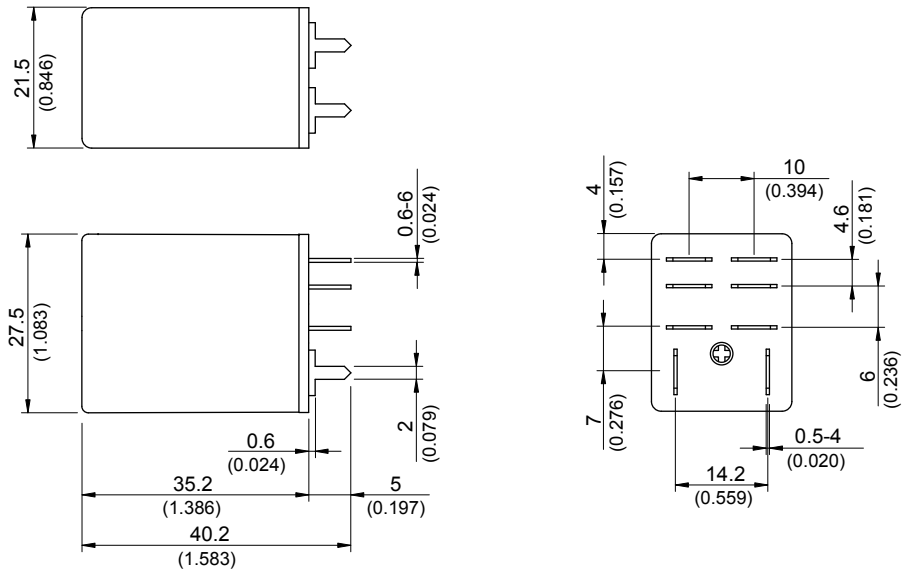


◆LA-S C



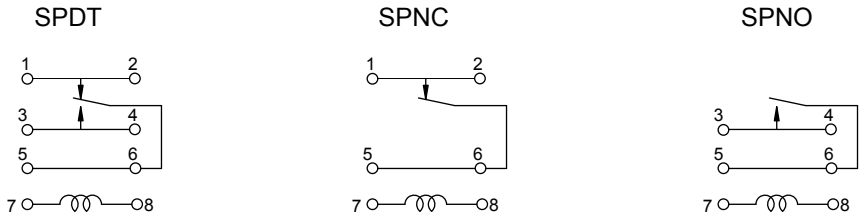
SCLA

◆LA-P C



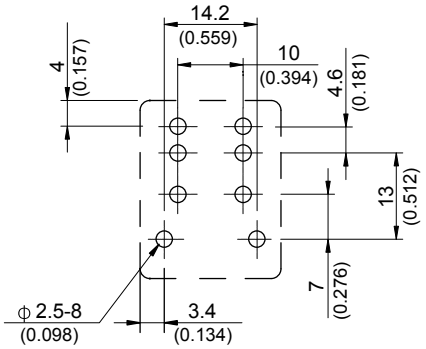
Wiring Diagram

BOTTOM VIEW



PC Board Layout

BOTTOM VIEW

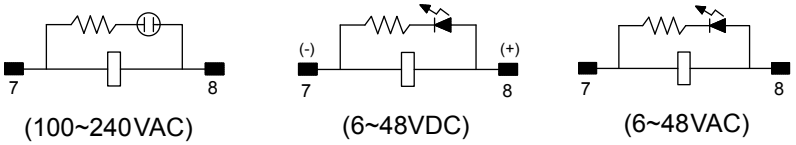


SCLA

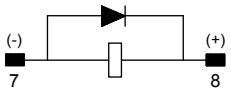
Designation (Provided with)

BOTTOM VIEW

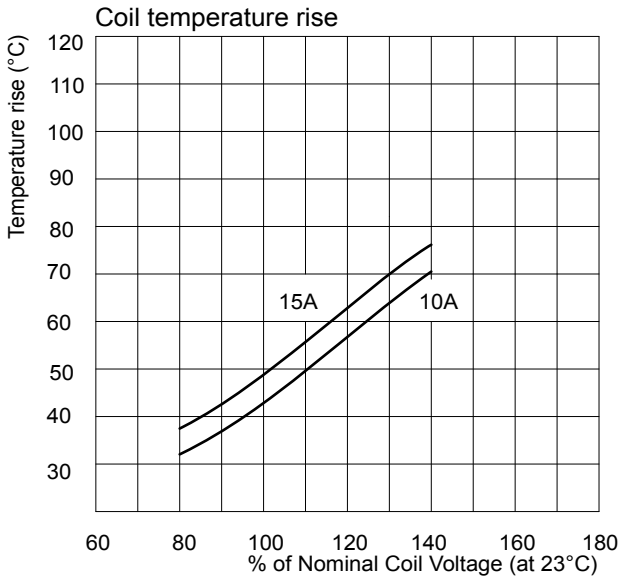
Lamp

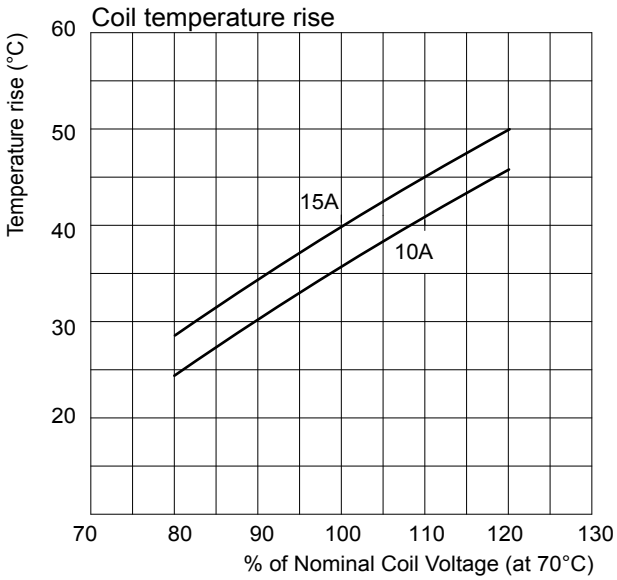


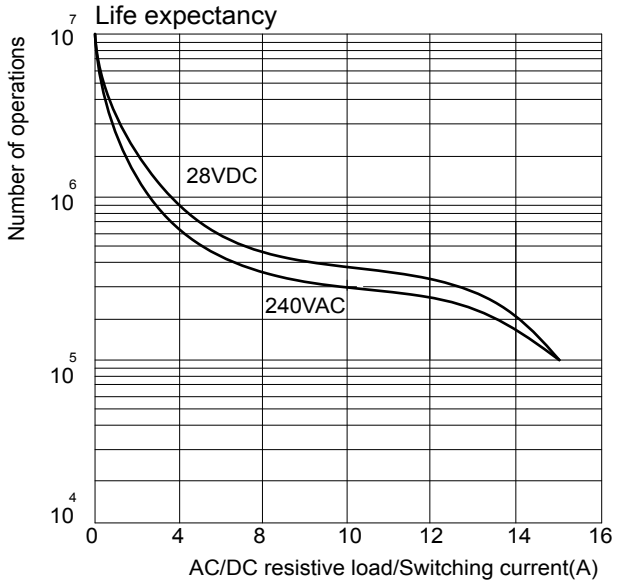
Diode

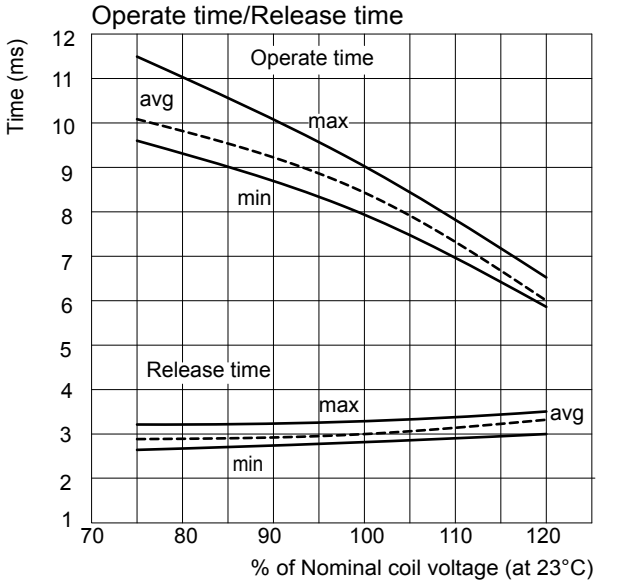


Engineering Data









735

Features

- 20A/25A general purpose Relays.
- SPDT, DPDT, TPDT contact configurations
- DC & AC coils available.
- Optional for flange covers, tapped core w/ antirotation tab, indicator lamp, push-to-test button, PCB terminals
- Comply ewith RoHS Directive 2011/65/EU.

Type List

◆ Standard Type

Terminal style	Contact form	Enclosure style				
		Open type	Dust cover	Ears on cover	Antirotation-tab	Ears on top
Quick terminal	1A (SPNO)	735-1A	735-1A-C	735-1A-C1	735-1A-C2	735-1A-C3
	1B (SPNC)	735-1B	735-1B-C	735-1B-C1	735-1B-C2	735-1B-C3
	1C (SPDT)	735-1C	735-1C-C	735-1C-C1	735-1C-C2	735-1C-C3
	2A (DPNO)	735-2A	735-2A-C	735-2A-C1	735-2A-C2	735-2A-C3
	2B (DPNC)	735-2B	735-2B-C	735-2B-C1	735-2B-C2	735-2B-C3
	2C (DPDT)	735-2C	735-2C-C	735-2C-C1	735-2C-C2	735-2C-C3
	3A (TPNO)	735-3A	735-3A-C	735-3A-C1	735-3A-C2	735-3A-C3
	3B (TPNC)	735-3B	735-3B-C	735-3B-C1	735-3B-C2	735-3B-C3
	3C (TPDT)	735-3C	735-3C-C	735-3C-C1	735-3C-C2	735-3C-C3
PCB terminal	1A (SPNO)	-------	735-1A-C-T	-------	-------	-------
	1B (SPNC)	-------	735-1B-C-T	-------	-------	-------
	1C (SPDT)	-------	735-1C-C-T	-------	-------	-------
	2A (DPNO)	-------	735-2A-C-T	-------	-------	-------
	2B (DPNC)	-------	735-2B-C-T	-------	-------	-------
	2C (DPDT)	-------	735-2C-C-T	-------	-------	-------
	3A (TPNO)	-------	735-3A-C-T	-------	-------	-------
	3B (TPNC)	-------	735-3B-C-T	-------	-------	-------
	3C (TPDT)	-------	735-3C-C-T	-------	-------	-------

◆ High Power Type

Terminal style	Contact form	Insulation system	Enclosure style	
			Dust cover	Ears on cover
Quick terminal	1A (SPNO)	F	735H-1A-F-C	735H-1A-F-C1
	1B (SPNC)		735H-1B-F-C	735H-1B-F-C1
	1C (SPDT)		735H-1C-F-C	735H-1C-F-C1
	2A (DPNO)		735H-2A-F-C	735H-2A-F-C1
	2B (DPNC)		735H-2B-F-C	735H-2B-F-C1
	2C (DPDT)		735H-2C-F-C	735H-2C-F-C1

Ordering Information

735	H	-	2C	-	F	-	C1	-	M	XXVXC
1	2		3		4		5		6	7

1. 735 -- Basic series designation

2. Blank -- Standard type
   H -- High power type

3. 1A -- Single pole normally open
   1B -- Single pole normally closed
   1C -- Single pole double throw
   2A -- Double pole normally open
   2B -- Double pole normally closed
   2C -- Double pole double throw
   3A -- Three pole normally open
   3B -- Three pole normally closed
   3C -- Three pole double throw

4. Blank -- Standard type
   F -- Class F

5. Blank -- Open type
   C -- With cover
   C1 -- With mounting ears on cover
   C2 -- With accessible mounting hole, with anti-rotation tab
   C3 -- Mounting ears on top of cover

6. Blank -- No special feature
   M -- With manual operator
   T -- Printed circuit board terminals
   L -- Pilot lamp

7. XXVXC -- Coil voltage (please refer to the coil rating data for the availability)"

Contact Rating

Type	735		735H
	1A, 1B, 1C, 2A, 2B, 2C	3A, 3B, 3C	
Resistive load	20A 240VAC 15A 28VDC	20A 120VAC 15A 240VAC/28VDC	30A 240VAC 15A 28VDC

Coil Rating (DC)

◆Standard type

Rated voltage (V)		Rated current 10% at 23ºC (mA)	Coil resistance 10% at 23ºC (Ω)	Max. continuous voltage at 50ºC	Pick up voltage (Max) at 23ºC	Drop out voltage (Min) at 23ºC	Power consumption at rated voltage
SP DP	6	188	32	130% of rated voltage	80 % of rated voltage	10 % of rated voltage	approx. 1.2W
	12	100	120				
	24	51	472				
	48	27	1800				
	110	11	10000				
	125	12.5	10000				
TP	6	250	24				approx. 1.5W
	12	125	96				
	24	63	384				
	48	31	1536				
	110	11.5	9600				
	125	13	9600				

SONG CHUAN

735

◆High Power Type

Rated voltage (V)	Rated current ±10% at 23ºC (mA)	Coil resistance ±10% at 23ºC (Ω)	Max continuous voltage at 55ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
6	188	32	100% of rated voltage	80% of rated voltage	10% of rated voltage	approx. 1.2W
12	100	120				
24	51	472				
48	27	1800				
110	11	10000				
125	12.5	10000				

Coil Rating (AC)

◆Standard Type

Rated voltage (V)		Coil resistance ±10% at 23ºC (Ω)	Max.continuous voltage at 50ºC	Pick up voltage (Max) at 23ºC	Drop out voltage (Min) at 23ºC	Power consumption at rated voltage
SP DP	6	4.2	110% of rated voltage	85 % of rated voltage	30 % of rated voltage	approx.3.0 VA
	12	18				
	24	72				
	110	1580				
	120	1700				
	220	5850				
	240	7200				
TP	6	3.9				approx.3.4VA
	12	14.5				
	24	64				
	110	1450				
	120	1540				
	220	5850				
	240	6750				

◆High Power Type

Rated voltage (V)	Coil resistance ±10% at 23ºC (Ω)	Max continuous voltage at 55ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
6	4.2	100 %of rated voltage	85 %of rated voltage	30 %of rated voltage	approx. 3.4VA
12	18				
24	72				
110	1580				
120	1700				
220	5850				
240	7200				

735

Specification

Contact material	AgSnO alloy	
Contact resistance(1)	50mΩ Max. (for 735), 100mΩ Max. (for 735H)	
Operate time(1)	25ms Max.	
Release time(1)	20ms Max.	
Insulation resistance(1)	1000MΩ Min. (DC 500V)	
Dielectric strength(1)	Between open contact	: AC 1000V, 50/60Hz 1min (for 735) : AC 1500V, 50/60Hz 1min (for 735H)
	Between contact and coil	: AC 1600V, 50/60Hz 1min (for 735) : AC 3000V, 50/60Hz 1min (for 735H)
	Between contact circuits	: AC 1600V, 50/60Hz 1min (for 735) : AC 3000V, 50/60Hz 1min (for 735)
Vibration resistance	Operating extremes	10 ~ 55Hz, amplitude 2.0mm
	Damage limits	10 ~ 55Hz, amplitude 2.0mm
Shock resistance	Operating extremes	10G
	Damage limits	100G
Life expectancy	Mechanical	10,000,000 operations (frequency 18,000 ops./hr)
	Electrical	100,000 operations (frequency 1,200 ops./hr) (for735)
		NO: 30,000 operations NC:10,000 operations (frequency 360 ops./hr) (for 735H)
Operating ambient temperature	-30~+50ºC (no freezing) (for 735) -30~+55ºC (no freezing) (for 735H)	
Weight	Approx. 80g	

Note : (1) intial value

Safety Approval

Certified	735			735H
	UL	CSA	FIMKO	UL / CUL
File No.	E88991	1664125	24560	E88991

Safety Approval Rating (FIMKO)

735 1A, 1B, 1C	735 2A, 2B, 2C	735 3A, 3B, 3C
25A 250VAC	25A 250VAC	20A 250VAC

Safety Approval Rating (UL - CSA)

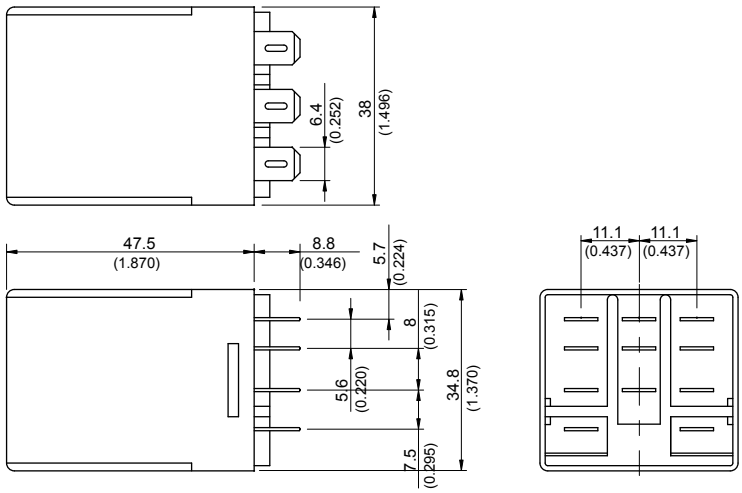
UL			CSA		
735 1A, 1B, 1C	735 2A, 2B, 2C	735 3A, 3B, 3C	735 1A, 1B, 1C	735 2A, 2B, 2C	735 3A, 3B, 3C
25A 28VDC 25A 277VAC 10A 600VAC 1.5HP 240VAC 1HP 120VAC	20A 28VDC 25A 277VAC 10A 600VAC 1.5HP 240VAC 1HP 120VAC	15A 28VDC 20A 277VAC 3/4HP 120VAC 1HP 240VAC	30A 277VAC 10A 600VAC 25A 28VDC 1.5HP 240VAC 1HP 120VAC	25A 277VAC 10A 600VAC 20A 28VDC 1.5HP 240VAC 1HP 120VAC	20A 277VAC 15A 28VDC 3/4HP 120VAC 1HP 240VAC

735

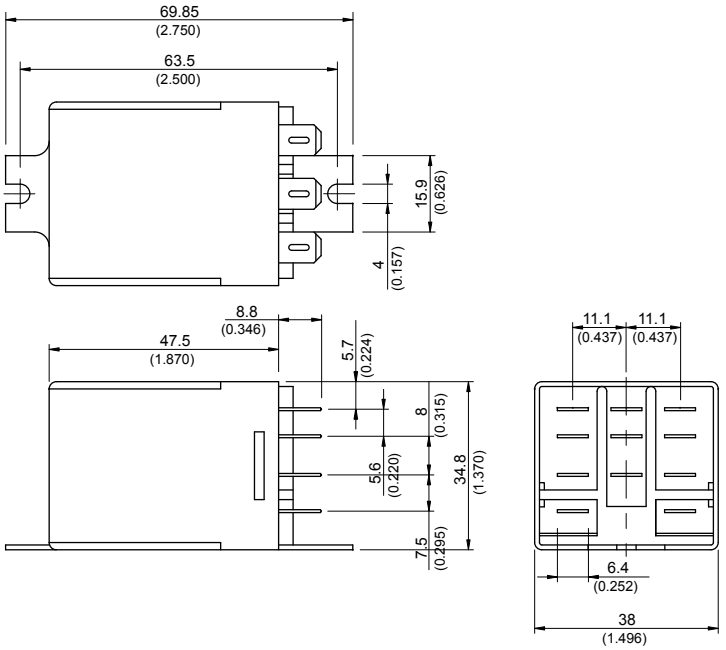
UL / CUL	
735H 1A, 1B, 1C	735H 2A, 2B, 2C
30A 277VAC	30A 277VAC
25A 28VDC	20A 28VDC
10A 600VAC	10A 600VAC
1.5HP 240VAC	1.5HP 240VAC
1HP 120VAC	1HP 120VAC

Outline Dimensions

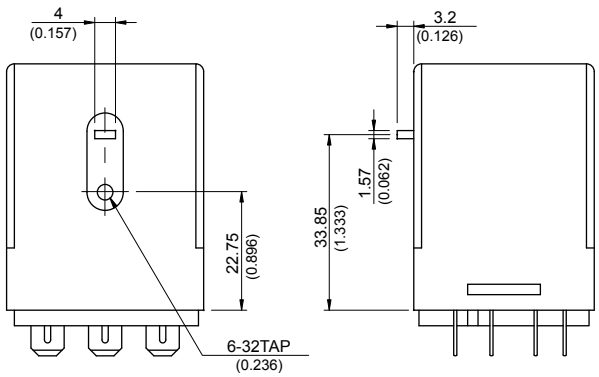
◆735 C



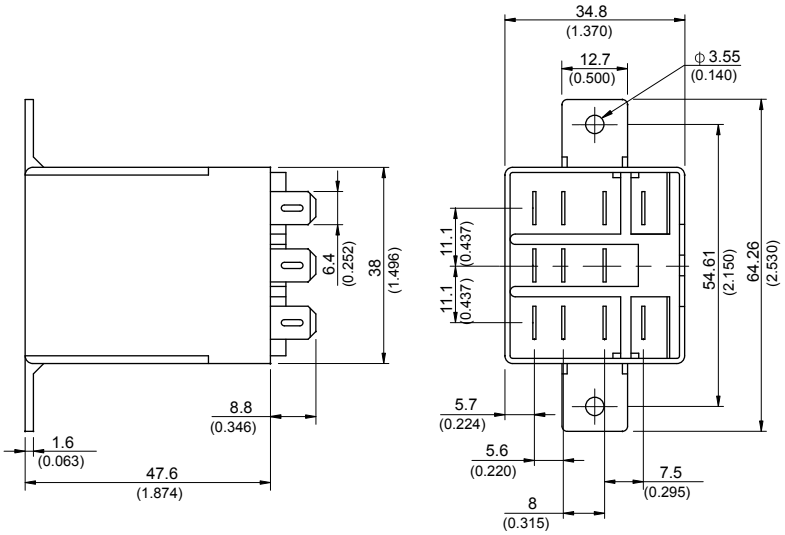
◆735 C1



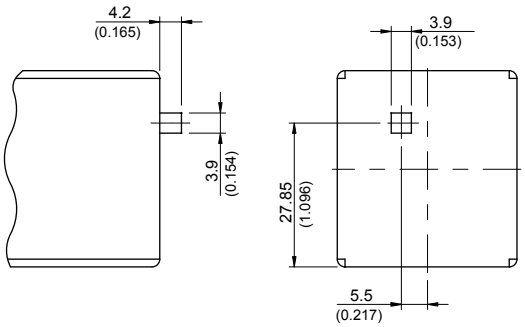
◆735 C2



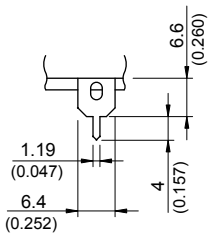
◆735 C3



◆735 M



◆735 T

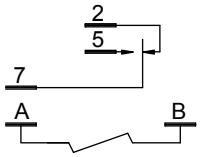


735

Wiring Diagram

BOTTOM VIEW

1C



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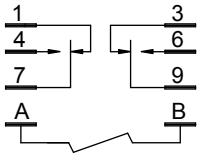

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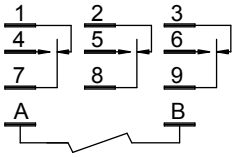

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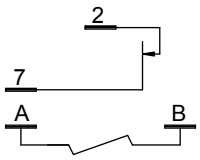

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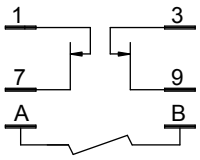

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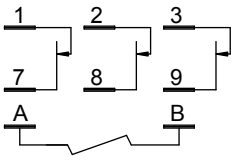
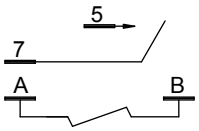


1A



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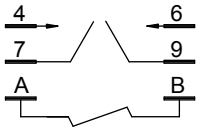
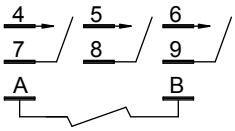


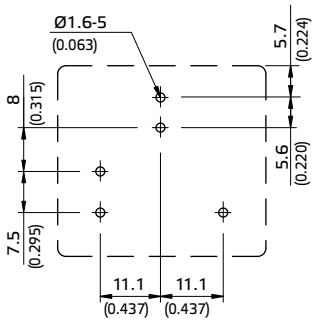
3A



PC Board Layout

BOTTOM VIEW

1P



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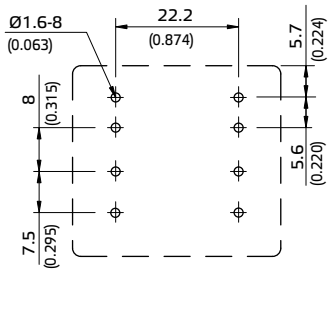

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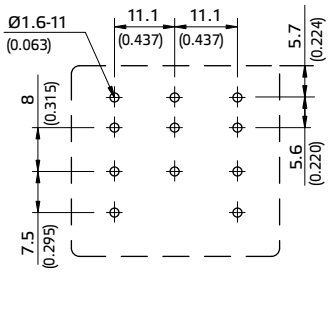
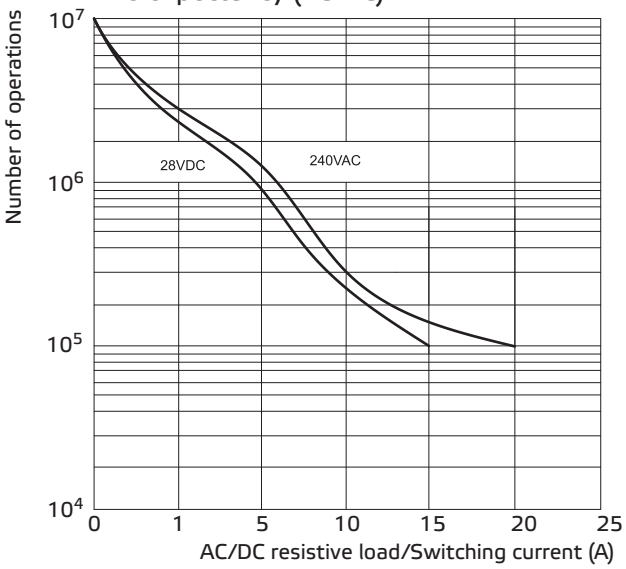
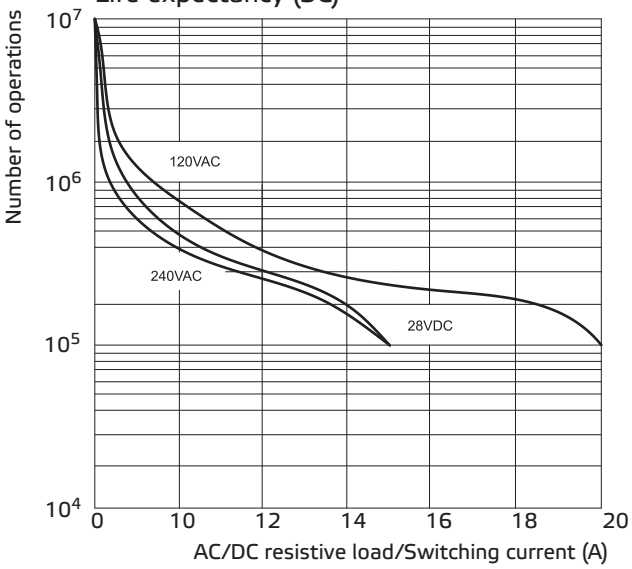


Engineering Data

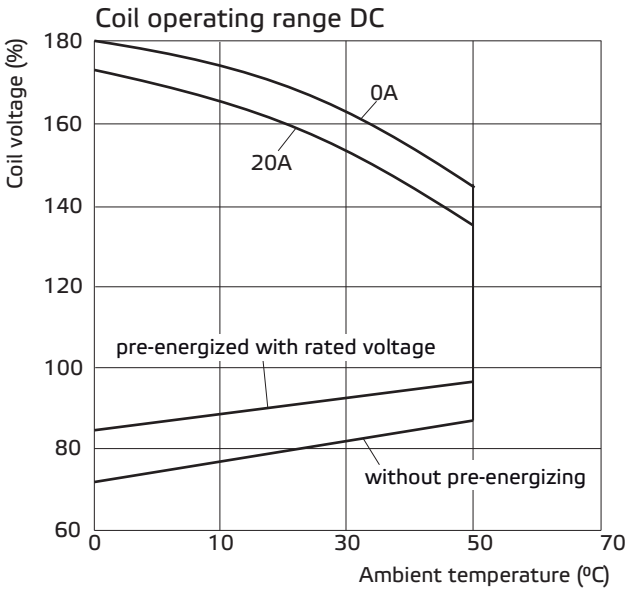
Life expectancy (1C/2C)



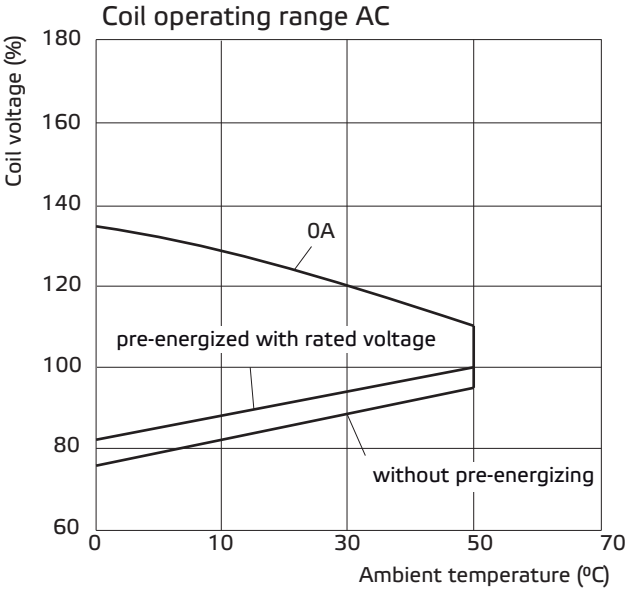
Life expectancy (3C)



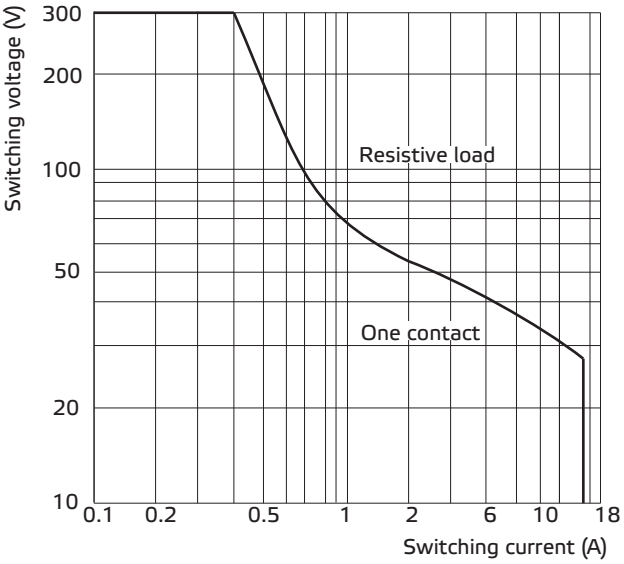
Coil operating range DC



Coil operating range AC



Max.DC load breaking capacity



737

Features

- 30A general purpose Power Relay.
- SPDM, SPDB, SPDM+DB contact configurations.
- AC & DC coils are both available.
- Optional for anti-rotation tab, tapped core indicator lamp & push-to-test button, flanged covers.
- Comply with RoHS-Directive 2011/65/EU.

Type List

Terminal style	Contact form	Designation	Enclosure style				
			Open type	Dust cover	Ears on cover	Antirotation-tab	Ears on top
Quick terminal	1X(SPDM)	------	737-1X	737-1X-C	737-1X-C1	737-1X-C2	737-1X-C3
	1Y(SPDB)		737-1Y	737-1Y-C	737-1Y-C1	737-1Y-C2	737-1Y-C3
	1Z (SPDM/B)		737-1Z	737-1Z-C	737-1Z-C1	737-1Z-C2	737-1Z-C3
	1X(SPDM)	Lamp	-------	737-1X-C-L	737-1X-C1-L	737-1X-C2-L	737-1X-C3-L
	1Y(SPDB)		-------	737-1Y-C-L	737-1Y-C1-L	737-1Y-C2-L	737-1Y-C3-L
	1Z (SPDM/B)		-------	737-1Z-C-L	737-1Z-C1-L	737-1Z-C2-L	737-1Z-C3-L
	1X(SPDM)	Manual	-------	737-1X-C-M	737-1X-C1-M	737-1X-C2-M	737-1X-C3-M
	1Y(SPDB)		-------	737-1Y-C-M	737-1Y-C1-M	737-1Y-C2-M	737-1Y-C3-M
	1Z (SPDM/B)		-------	737-1Z-C-M	737-1Z-C1-M	737-1Z-C2-M	737-1Z-C3-M
PCB terminal	1X(SPDM)	------	-------	737-1X-C-T	-------	737-1X-C2-T	737-1X-C3-T
	1Y(SPDB)		-------	737-1Y-C-T	-------	737-1Y-C2-T	737-1Y-C3-T
	1Z (SPDM/B)		-------	737-1Z-C-T	-------	737-1Z-C2-T	737-1Z-C3-T
	1X(SPDM)	Lamp	-------	737-1X-C-LT	-------	737-1X-C2-LT	737-1X-C3-LT
	1Y(SPDB)		-------	737-1Y-C-LT	-------	737-1Y-C2-LT	737-1Y-C3-LT
	1Z (SPDM/B)		-------	737-1Z-C-LT		737-1Z-C2-LT	737-1Z-C3-LT
	1X(SPDM)	Manual	-------	737-1X-C-MT	-------	------- 737-1X-C2-MT	737-1X-C3-MT
	1Y(SPDB)		-------	737-1Y-C-MT	-------	737-1Y-C2-MT	737-1Y-C3-MT
	1Z (SPDM/B)		-------	737-1Z-C-MT	-------	737-1Z-C2-MT	737-1Z-C3-MT

Ordering Information

737 - 1X - F - C1 - M XXVXC
1 2 3 4 5 6

1. 737 -- Basic series designation
2. 1X -- Single pole double make
   1Y -- Single pole double break
   1Z -- Single pole double make/break
3. Blank -- Standard type
   F -- Class F
4. Blank -- Open type
   C -- With Cover
   C1 -- With mounting ears on cover
   C2 -- With accessible mounting hole with anti-rotation tab
   C3 -- Mounting ears on top of cover
5. Blank -- No special feature
   M -- With manual operator
   T -- Printed circuit board terminals
   L -- Pilot lamp
6. XXVXC -- Coil voltage (please refer to the coil rating data for the availability)

Contact Rating

Resistive load	30A 28VDC, 15A 600VAC, 30A 300VAC
Motor	1HP 120VAC, 1.5HP 200~600VAC

Coil Rating (DC)

Rated voltage (V)		Rated current ±10 % at 23ºC (mA)	Coil resistance ±10 % at 23ºC (Ω)	Max. continuous voltage at 75ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
1Y	6	188	32	110 % of rated voltage	80 % of rated voltage	10 % of rated voltage	approx. 1.2W
	12	100	120				
	24	51	472				
	48	27	1800				
	110	11	10000				
	125	12.5	10000				
1Z	6	250	24				approx. 1.5W
	12	125	96				
	24	63	384				
	48	31	1536				
	110	11.5	9600				
	125	13	9600				

Coil Rating (AC)

Rated voltage (V)	Coil resistance ±10 % at 23ºC (Ω)	Max. continuous voltage at 75ºC	Pick up voltage(Max) at 23ºC	Drop out voltage(Min) at 23ºC	Power consumption at rated voltage
6	4.2	110 % of rated voltage	85 % of rated voltage	30 % of rated voltage	approx. 3.0VA
12	18				
24	72				
110	1580				
120	1700				
220	5500				
240	7200				

737

Specification

Contact material	AgSnO alloy	
Contact resistance (1)	50 mΩ Max.	
Operate time (1)	25 ms Max.	
Release time (1)	20 ms Max.	
Insulation resistance (1)	1000 MΩ Min. (DC 500V)	
Dielect ric strength (1)	Between live parts & ground	: AC 1600V , 50/60Hz 1 min.
	Between contact and coil	: AC 2200V , 50/60Hz 1 min.
	Between open contact	: AC 1000V , 50/60Hz 1 min.
Vibration resistance	Operating extremes	10 ~55Hz , amplitude 2.0 mm
	Damage limits	10 ~55Hz , amplitude 2.0 mm
Shock resistance	Operating extremes	10G
	Damage limits	100G
Life expectancy	Mechanical	10,000,000 operations (frequency 18,000 operations/hr)
	Electrical	100,000 operations (frequency 360 operations/hr)
Operating ambient temperature	-40～+75º C (no freezing)	
Weight	Approx. 83 g	

Note ：(1) initial value

Safety Approval

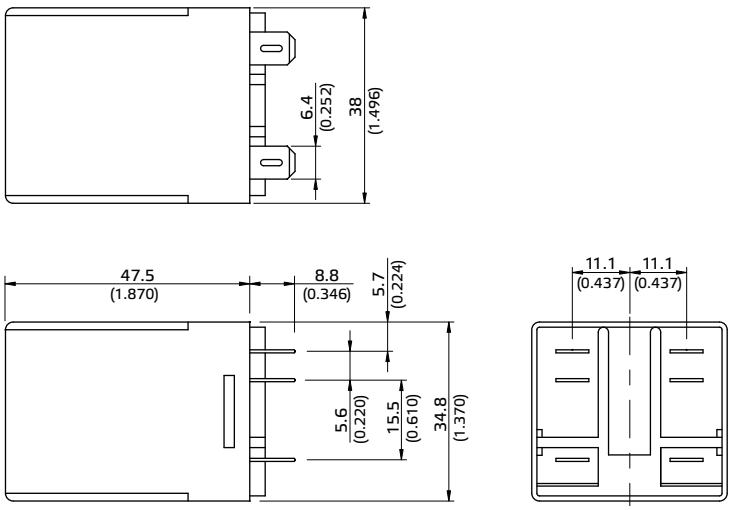
Certified	UL	CSA	TUV
File No.	E88991	1664125	R50044822

Safety Approval Rating

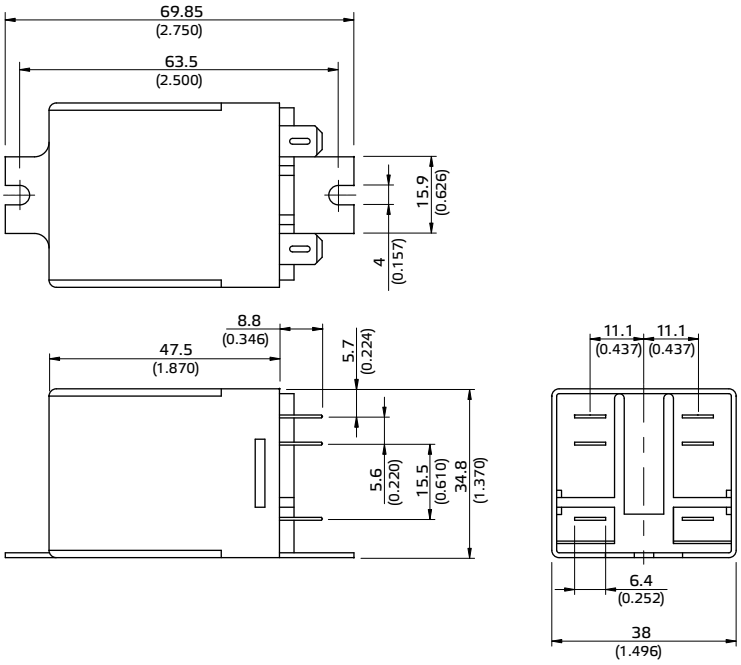
UL	CSA	TUV
30A 28VDC	30A 28VDC	30A 250VAC (for 1X,1Z)
30A 300VAC	30A 300VAC	
15A 600VAC	15A 600VAC	
1HP 120VAC	1HP 120VAC	
1.5HP 200/240/480/600VAC	1.5HP 200~600VAC	

Outline Dimensions

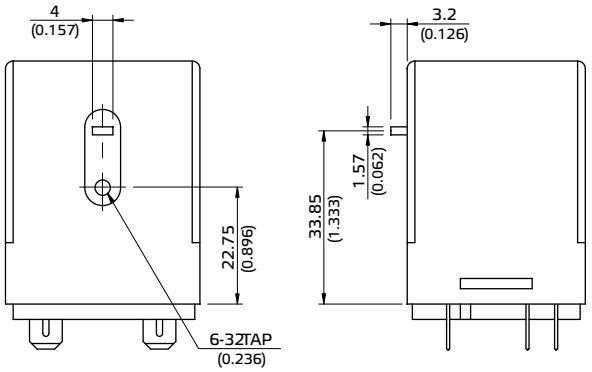
◆737 C



◆737 C1



◆737 C2



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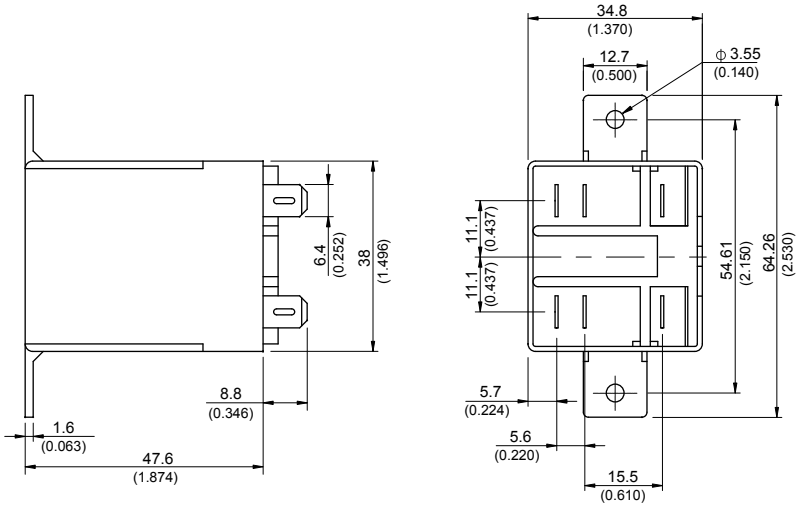

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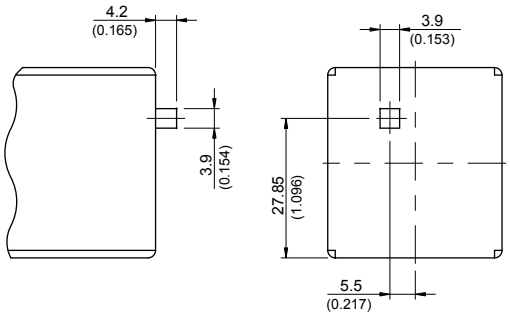

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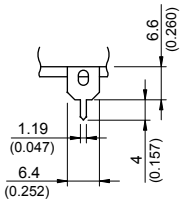
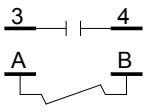


Wiring Diagram

BOTTOM VIEW

1X



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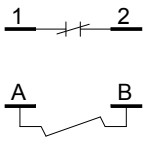

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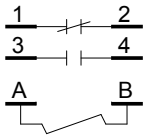
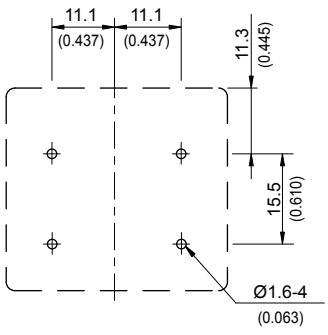


PC Board Layout

BOTTOM VIEW

1X



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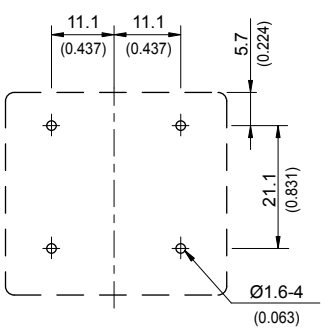

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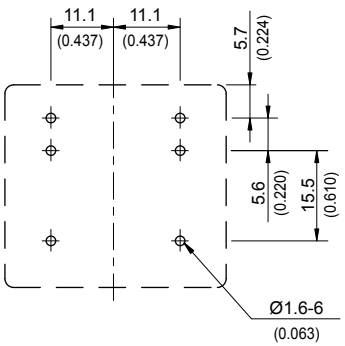
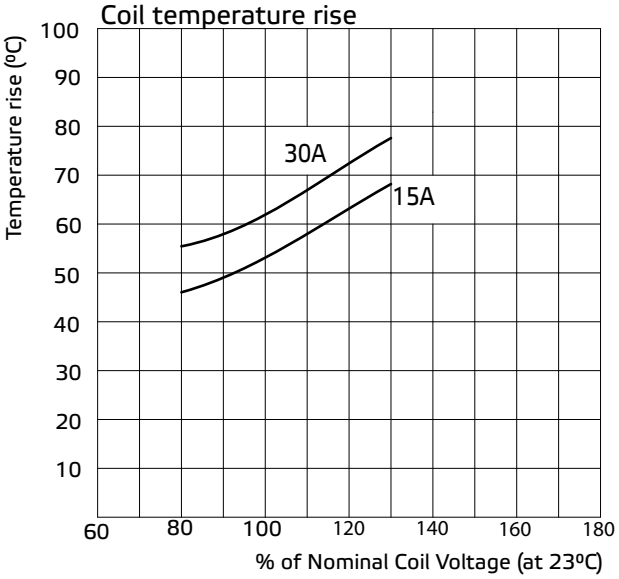
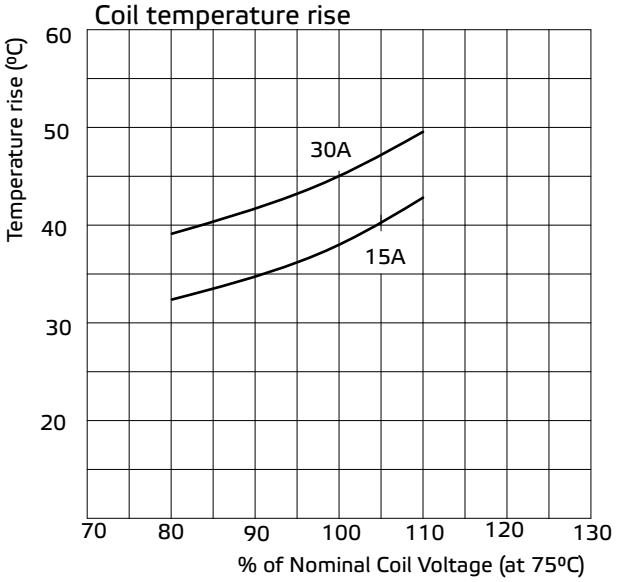


Engineering Data

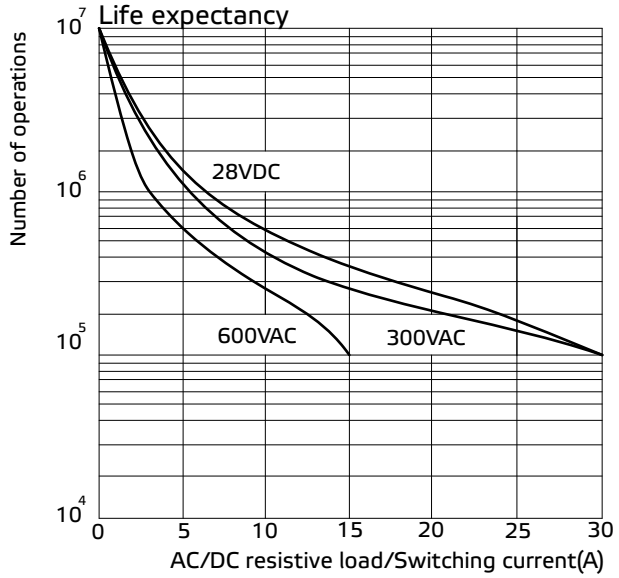
Coil temperature rise



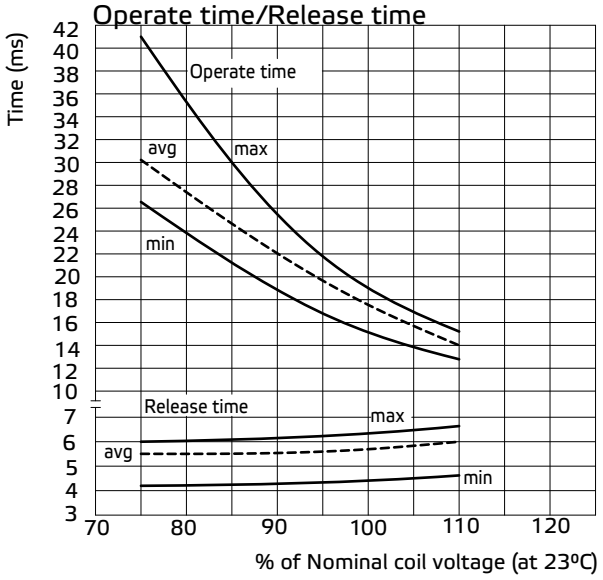
Coil temperature rise



Life expectancy



Operate time/Release time



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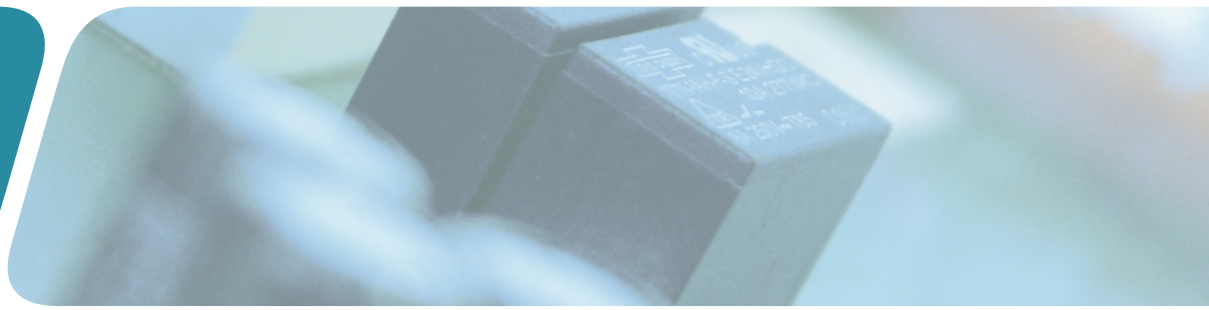

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