



# Push-in relay

Easier wiring

*Our Pursuit  
You are brilliant*

**UPUN** 友邦



## Brief Introduction

Shanghai UPUN Electric (Group) is a high-tech enterprise integrating R & D, manufacturing, sales and technical services, National-level specialized and special new "little giant" enterprise, Shanghai science and technology giant enterprise, Shanghai patent pilot enterprise, Shanghai civilized unit, Songjiang District Enterprise Technology Center, China Integrity Management demonstration Unit, China Electrical Appliance Industry Association technological Innovation Leader. Won the Songjiang District quality Innovation Award, Shanghai Bureau of Industry and Commerce contract-abiding AAA enterprises, Shanghai Taxation Bureau tax credit A enterprises, Shanghai harmonious labor relations enterprises and State Administration of Industry and Commerce contract-abiding enterprises.

The company has passed ISO9001 quality management system certification, ISO14001 environmental management system certification and ISO45001 occupational health and safety management system certification. Products have passed China CCC certification, China Quality Certification Center CQC certification, China Classification Society CCS certification, international explosion-proof IECEx certification, and EU CE certification, U.S. UL/CUL certification, German VDE certification, TUV Rheinland certification, Brazil INMETRO certification and EU ROHS, etc.

The company contains industrial electrical appliances, new energy auto parts, charging equipment and system solutions, and machine substitution industries, with industrial wiring technology, PCB terminal blocks and device connectors, push buttons, signal lights, relays, control cabinet, transfer switches, analog signals isolators, transmitters, photoelectric relay modules, switching power supplies, signal lighting protection, heavy duty connector, electrical accessories and high-voltage wiring harnesses, AC/DC charging piles, mode 2 and hundreds of series and tens of thousands of specifications. At present, it has hundreds of product patents and participated in the drafting of dozens of standards.

UPUN Electric (Group) always takes innovation as the source of motivation, constantly adheres to technological innovation, increases R&D investment, and establishes strategic cooperation with overseas scientific research institutions, builds a technological innovation platform, and has established the product R&D center, the mould center, and the testing center. Adopt advanced automated production and processing equipment, testing equipment, etc., and cultivate a group of professional technical teams. Products are widely used in nuclear power industry, electric power, metallurgy, machinery, chemical industry, railways, new energy and other fields, and in the State Grid, Southern Power Grid, Olympic venues, Qinshan Nuclear Power Station, Beijing-Guangzhou Railway, Beijing-Zhengzhou Railway, Guangzhou Baiyun Airport, Beijing Metro, Oriental Pearl Tower, Three Gorges Project, Shengli Oilfield, Sinopec and other key projects at home and abroad are playing an increasingly important role.

UPUN always adheres to the enterprise strategy of combining enterprise development with promoting the development of national industry, actively strengthens its core competitiveness, and is committed to becoming an international well-known electrical brand.

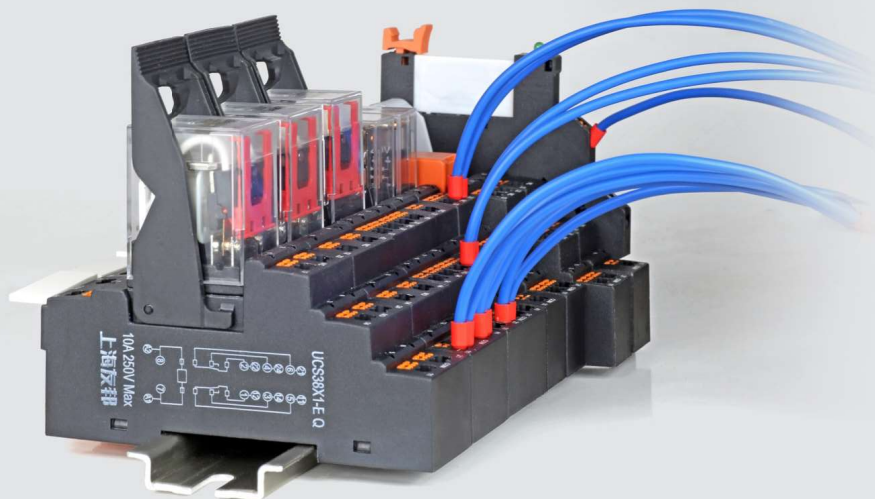
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# UCS

## Push-in relay socket

### Features

UCS Push-in relay socket is a product which UPUN applied a connection technology of push-in. Compared with traditional screw type wiring, the connection technology of push-in will greatly reduce wiring time. There are many advantages of vibration-resistant, anti-shock, high degree of protection, fast wiring and maintenance-free. Push-in relay socket is used in mechanical automation equipment, industrial robots, mountain and offshore wind power, etc.

1. All wires can be quickly connected
2. Orange button avoids wiring errors
3. Fast wiring, reliable installation and saving 75% time



© Push-in relay socket



## Push-in relay socket








### ◎ Type and meaning of push-in relay socket

UCS			X1		-	E	Q
Company code	<b>1</b>	<b>2</b>	Internal hard connection	<b>3</b>		Anti-finger contact structure	Push-in wiring

No.	Content	Specification code		
<b>1</b>	Design no.	1.Suit for UCR1 relays	2.Suit for UCR2 relays	3.Suit for UCR3 relays
<b>2</b>	Number of pin holes	5.Apply to a set of conversion relays      8.Apply to two sets of conversion relays 14.Apply to four sets of conversion relays		
<b>3</b>	Applicable types	For welded relays(only for UCR1 relays)		

## UCS1~3 Push-in relay socket

### © Technical data

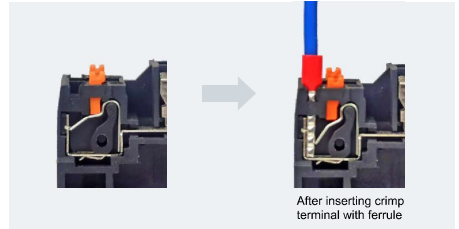
Socket type	UCS15X1-EQ	UCS18X1-EQ	UCS15X1B-EQ	UCS18X1B-EQ	UCS28X1-EQ	UCS214X1-EQ	UCS38X1-EQ
Adaptable relays	UCR11P	UCR12P	UCR11B	UCR12B	UCR22P	UCR24P	UCR32P
				UCR11B 8 pin relay			
Related current	12A	10A	12A	10A	12A	10A	16A
Related insulation voltage	300VAC						
Ambient temperature	-45 ~ +85℃ RH No ice and condensing						
Relative humidity	<95%						
Contact resistance	≤50mΩ						
Insulation resistance	>100MQ min. (500V DC megohmmeter)						
Break-down voltage	4000VAC V/S coil/touchpoint, touchpoint, 2500VAC V/S between contacts						
Electrical life	10000 times						
Environment requirements	Compliant with EU ROHS directives						
Flame retardant requirements	UL94-V0	UL94-V0	UL94-V2	UL94-V2	UL94-V0	UL94-V0	UL94-V2
Plastic parts material	PA66						
Connector material	H62Y high -precision tape and nickel-plated surface of H62Y						
Clamping spring material	Nickel-chromium spring steel CrNi						
Using a screwdriver blade size	2.5 × 0.4mm						
Stripping length (fine multi-stranded wire)	10...12mm/0.43 in.						
Stripping length( single wire)	10...12mm/0.41 in. 0.25mm²...2.5mm² / 22...14AWG						
Connection method	<p>Universal connection for all wire types: Use the operating tool to open the terminal unit, and insert the wire. Then remove the operating tool. Finally, the wiring is complete.</p> <p>Push-in connection: Only insert the wire directly. Hard wire, such as single wire, stranded wire and fine multi-stranded wire with cold-pressed joints, can be inserted directly without tools.</p> <p>Remove wire: Press the orange button with a screwdriver, open the terminal and pull out wire.</p> <p>Wire range for screwdriver connection: 0.25mm²...2.5mm² of single wire and fine multi-stranded wire.</p> <p>Wire range for direct socket-in connection: 0.5mm²...2.5mm² single wire and 0.75mm²...1.5mm² fine multi-stranded wire with 12mm ferrules.</p>						
Apply for copper wire	 Single wire  Stranded wire  Fine multi-stranded wire and tin-plated  Fine multi-stranded wire  Fine multi-stranded wire with end fastening  Fine multi-stranded wire with ferrules (gas-tight treatment)  Fine multi-stranded wire with terminal pins (gas-tight treatment)						

## Push-in relay socket

### Great reliability

#### Vibration resistance

Push-in wiring structure achieves great contact reliability and excellent vibration resistance



### Clear mark

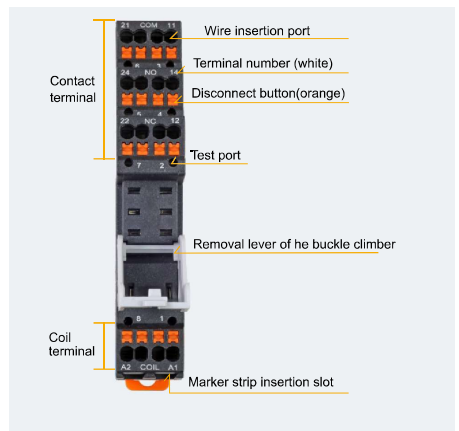
#### The end with marker strip

Marks can be freely printed, which is easy to wire



### Great recognition

Because the clear contrast of black and white between the shell of the socket and the terminal text, it is easy to confirm the terminal number even under poor lighting conditions, which helps to prevent wrong wiring. In addition, with the distinct color contrast between the shell of the socket and the orange wire removal button, the wire insertion port and the wire removal button can be clearly identified to prevent wires from being inserted by mistake.



## ◎ Time-saving and high efficiency

### Reduce maintenance man-hours

Screw-type wiring may cause the screws to loosen due to vibration during use. But push-in type doesn't need be screwed and implemented torque management when loading and unloading wires. Besides, the quality of wiring is not affected by the literacy of on-site operators.



## ◎ Safe and convenience

### Have a buckle climber with removal lever

Apply the buckle climber with the function of detachable wire and fixing relay



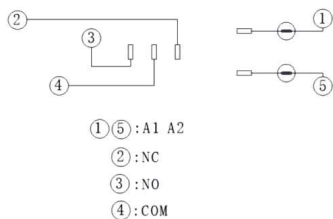
### Anti-finger touch protection structure

The anti-finger touch protection structure is safe to use and can make workers feel at ease

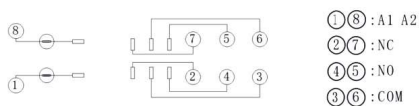


# Push-in relay socket

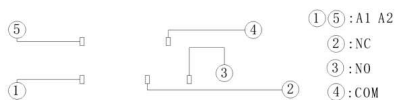
## Terminal device/wiring diagram



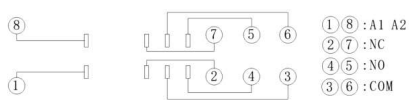
UCS15X1-EQ



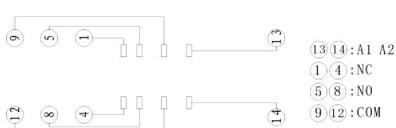
UCS18X1-EQ



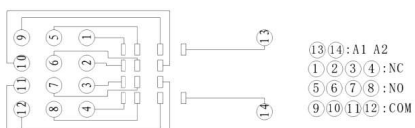
UCS15X1B-EQ



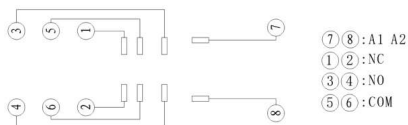
UCS18X1B-EQ



UCS28X1-EQ

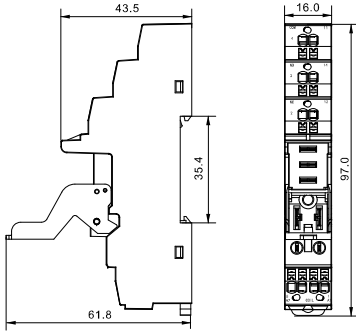


UCS214X1-EQ

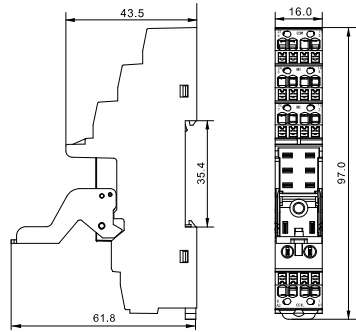


UCS38X1-EQ

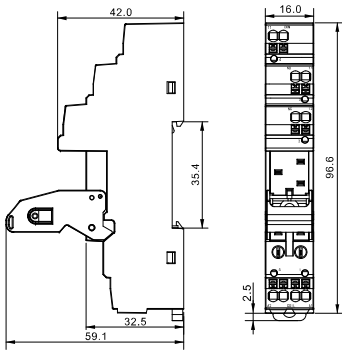
◎ Overall dimensions



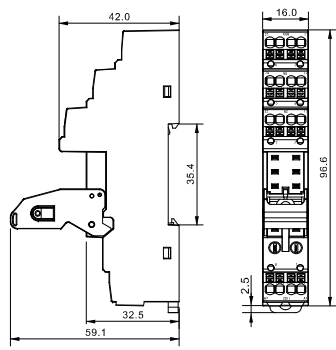
UCS15X1-EQ



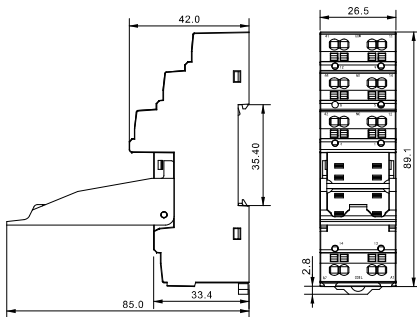
UCS18X1-EQ



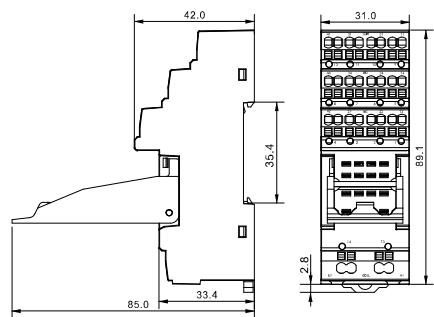
UCS15X1B-EQ



UCS18X1B-EQ

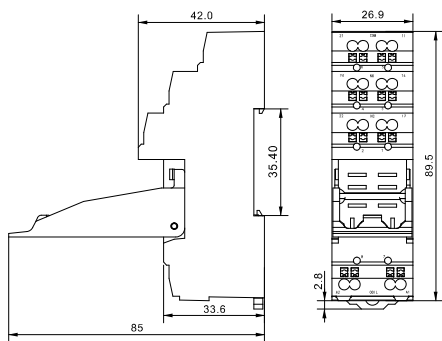


UCS28X1-EQ



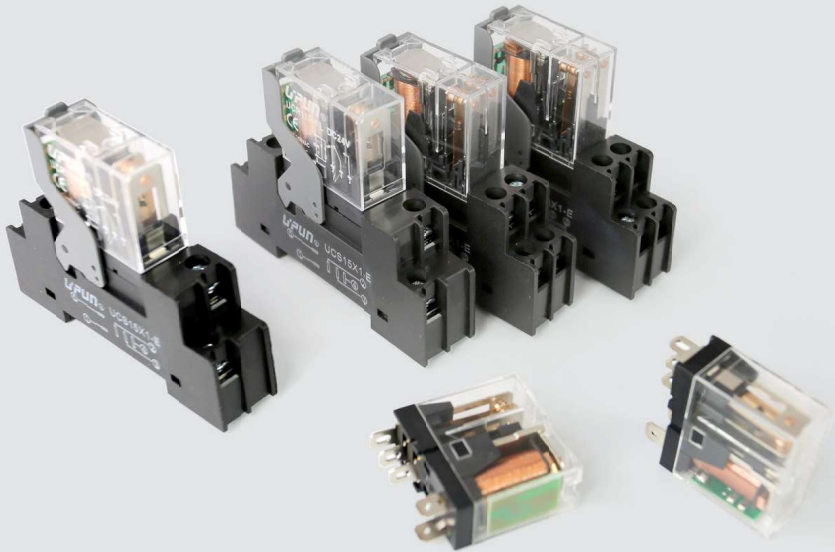
UCS214X1-EQ

## Push-in relay socket



UCS38X1-EQ





# UCR1

## Power relay

### Features

UCR1 Power relay has the characteristics of reasonable structure design, small size, large capacity, good pressure resistance, reliable operation, long service life, convenient installation and use, etc. It is suitable for electrical circuits with AC 50/60Hz, voltage up to 220V or DC voltage up to 110V, and rated current 8A or 12A

- 1.Small in size,light weight and good look
- 2.Large capacity,12A(1-polar),8A(2-polar)
- 3.The break-down voltage between coil and contact is 2500V,and surge breakdown voltage up to 8000V
- 4.The insulation distance between contact and coil > 8mm
- 5.There are many methods to install it
- 6.Widely applied in various industrial automation control occasions, for connecting or breaking circuits

## UCR1 Power relay

UCR1  
Power relay

## ◎ Technical data

Contact resistance	50mΩ max. (DC6V 1A)
Operate	75% max.(normal temperature)
Release voltage	5% min.(normal temperature)
Operate time	20ms max.
Release time	20ms max.
Break-down voltage	Between contacts of same polarity:1000VAC/1min Between coil and contacts:5000VAC/min
Surge breakdown voltage	8,000VAC (1.2/50μs)
Insulation resistance	1,000MΩ (500VDC)
Temperature rise	Coil:35K max.;Contact:40K max.
Vibration resistance	Malfunction:10~55Hz(double amplitude 1.5mm);Destruction:10~55Hz(double amplitude 1.5mm);
Shock resistance	Malfunction: 98m/s <sup>2</sup> ; Destruction: 980m/s <sup>2</sup>
Mechanical durability	10,000,000 times
Ambient temperature	-40~+70℃
Ambient humidity	20~85%RH

## ◎ Type no.

UCR1 □ P - FL □ □ □ □

UCR1	Voltage
□	DC/AC
P	No letter:standard type
-	L:with LED indicator
FL	F:inrush type
□	FL:inrush type with LED indicator
□	P:socket-in type
□	1:1change-over contact,related contact current 12A
□	2:2 change-over contacts,related contact current 8A
□	Design no.

Min. contact capacity

Max. switching capacity(Resistance load )	12A/250VAC (1P,change-over contact ) 8A/250VAC (2P,change-over contact )
Max. switching current	12A (1P,change-over contact ) 8A (2P,change-over contact )
Min. switching capacity(Reference value)	3,000VA (1P,change-over contact ) 2,000VA (2P,change-over contact )
Max. switching power	DC5V, 100mA

Coil

DC

Related voltage(v)	Related current(mA)	Coil resistance( $\Omega \pm 10\%$ )	Power consumption(VA)
5	106.4	47	530
6	88.2	68	530
12	44.4	270	530
24	22.0	1090	530
48	11.0	4350	530
110	4.8	22830	530

AC(50Hz)

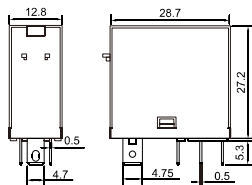
Related voltage(v)	Related current(mA)	Coil resistance( $\Omega \pm 10\%$ )	Power consumption(VA)
12	93.0	66.2	1.2~1.4
24	46.5	265	1.2~1.4
48	25.0	1060	1.2~1.4
110/110	11.0 / 13.0	4600	1.2~1.4
220/240	5.0 / 5.9	22260	1.2~1.4

Notes:  
1.The maximum allowable voltage is 130% of the related voltage at normal temperature  
2.Expect DC24V and AC220V, please confirm with the factory when ordering

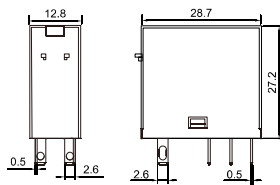
## UCR1 Power relay

## Overall dimension

Plug-in housing 1P standard type



Plug-in housing 2P standard type



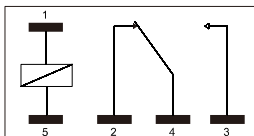
Tolerance

< 1mm	± 0.2mm
1~5mm	± 0.3mm
> 5mm	± 0.4mm

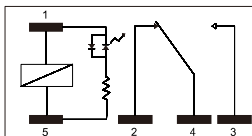
## Terminal device/wiring diagram

Plug-in, 1P change-over type

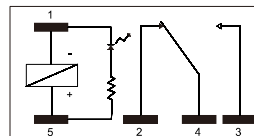
Standard type



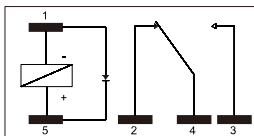
With LED indicators(AC)



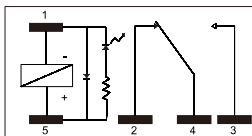
With LED indicators(DC)



Inrush type

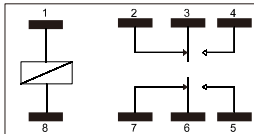


Inrush type with LED indicators

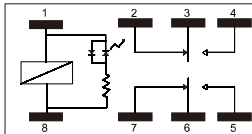


Plug-in, 2P change-over type

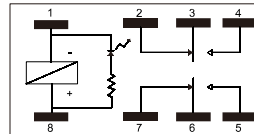
Standard type



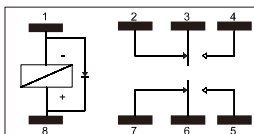
With LED indicators(AC)



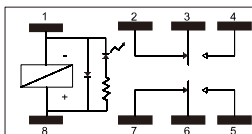
With LED indicators(DC)

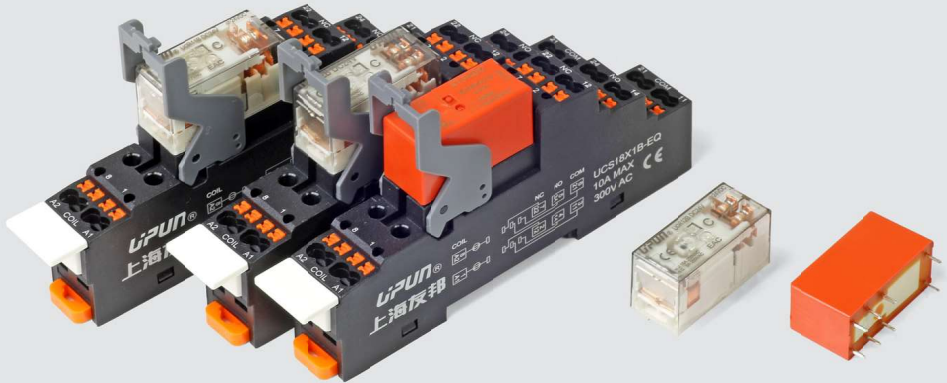


Inrush type



Inrush type with LED indicators





# UCR1□B

## Small high power DC relay

### Features

UCR1□B Small high power DC relay has the characteristics of reasonable structure design, great pressure resistance, reliable operation, long service life, convenient installation and use, etc.

- 1.Contact switching capability is 16A
- 2.Low height, only 15.7mm
- 3.Break-down voltage between coil and contacts is 5kV
- 4.Creepage distance is 10mm
- 5.Satisfy the requirements of reflow soldering
- 6.Various contact forms are available
- 7.There are UL insulation and F insulation to be optional

UCR1□B Small high power DC relay

UCR1□B  
Small high power DC relay

Technical data

Contact form	1Z	2Z
Contact resistance	≤100mΩ (DC6V 1A)	
Contact material	AgSnO <sub>2</sub>	
Contact load (resistive)	12A/16A 250VAC	8A 250VAC
Max. switching voltage	440VAC / 300VDC	
Max. switching current	12A/16A	8A
Max. switching power	3000VA / 4000VA	2000VA
Mechanical durability	1 × 10 <sup>7</sup> times	
Electrical durability	1 × 10 <sup>5</sup> times (16A 250VAC, resistive load, AgSnO <sub>2</sub> , Room temperature, 1s on 9s off) 5 × 10 <sup>4</sup> times (8A 250VAC, resistive load, AgSnO <sub>2</sub> , Room temperature, 1s on 9s off)	
Insulation resistance	1,000MΩ (500VDC)	
Break-down voltage	Between roil and contact: 5,000VAC/1min; between break contacts: 1,000VAC/1min; between contact groups: 2,500VAC/1min	
Surge breakdown voltage(Between coil and contacts)	10kV (1.2/50μs)	
Operate time(rated voltage)	≤15ms	
Release time(rated voltage)	≤8ms	
Roil temperature rise(rated voltage)	≤55K	
Shock resistance	Malfunction:98m/s <sup>2</sup> ; 98m/s <sup>2</sup> ; Destruction: 980m/s <sup>2</sup>	
Vibration resistance	Malfunction:98m/s <sup>2</sup> ; 10~150Hz; Destruction: 10g / 5g	
Ambient humidity	5%~85%RH	
Ambient temperature	-40~+85℃	
Terminal form	Print format	
Related roil power	Approx 400mW	
Weight	Approx 13.5g	
Encapsulation	Solder Resistant	

Type no.

UCR1 □ B DC□□□V

Coil working voltage and details for coil Specifications
Solder pin
Number of contact groups
1:1p, switching contact
2:2p, switching contact
Design no.

## Coil

### DC

Related voltage ( VAC )	Operate voltage ( VDC )	Release voltage ( VDC )	Max. voltage ( VDC )	Coil resistance ( $\Omega$ )
5	$\leq 3.5$	$\geq 0.5$	7.5	$62 \times (1 \pm 10\%)$
6	$\leq 4.2$	$\geq 0.6$	9.0	$90 \times (1 \pm 10\%)$
9	$\leq 6.3$	$\geq 0.9$	13.5	$202 \times (1 \pm 10\%)$
12	$\leq 8.4$	$\geq 1.2$	18.0	$360 \times (1 \pm 10\%)$
18	$\leq 12.6$	$\geq 1.8$	27.0	$810 \times (1 \pm 10\%)$
24	$\leq 16.8$	$\geq 2.4$	36.0	$1440 \times (1 \pm 10\%)$
48 <sup>(2)</sup>	$\leq 33.6$	$\geq 4.8$	72.0	$5760 \times (1 \pm 15\%)$
60 <sup>(2)</sup>	$\leq 42.0$	$\geq 6.0$	90.0	$7500 \times (1 \pm 15\%)$
110 <sup>(2)</sup>	$\leq 77.0$	$\geq 11.0$	165.0	$25200 \times (1 \pm 15\%)$

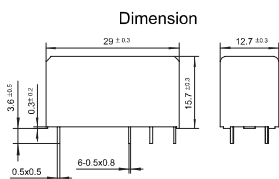
1. Max. voltage refers to the maximum value of the voltage that the relay coil can withstand in a short period of time.

2. Products with a rated voltage  $\geq 48V$  must be taken measures to suppress the over-voltage in order to protect the coil from damage ( eg: connect a diode in parallel with the coil ) .

### AC(50Hz)

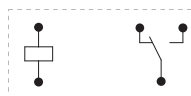
Related voltage ( VAC )	Operate voltage ( VDC )	Release voltage ( VDC )	Coil current ( mA )	Coil resistance $\square \Omega$
24	$\leq 18.0$	$\geq 3.6$	31.6	$350 \times (1 \pm 10\%)$
115	$\leq 86.3$	$\geq 17.3$	6.6	$8100 \times (1 \pm 15\%)$
230	$\leq 172.5$	$\geq 34.5$	3.2	$32500 \times (1 \pm 15\%)$

## Overall dimension and wiring diagram

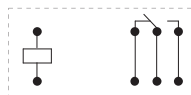


5mm pin spacing

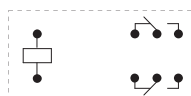
Diagram(bottom)



5mm, 1P12A,UCR11B



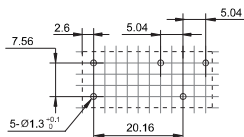
5mm, 1P16A,UCR11B



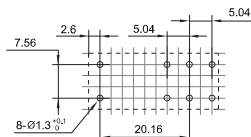
5mm, 2组8A,UCR12B

UCR1□B Small high power DC relay

◎ Mounting hole size



5mm, 1P12A,UCR11B



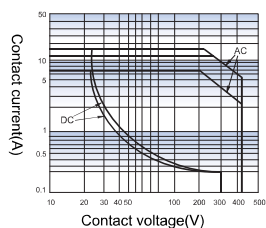
5mm, 2P8A,UCR12B  
1P16A,8pin, UCR11B

Notes:

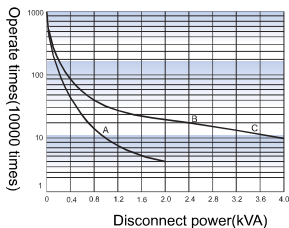
- Notes:
1. Some dimension of the product has no a dimensional tolerance. The external dimension  $\leq 1\text{mm}$ , the tolerance  $\pm 0.2\text{mm}$ ;  
The external dimension is between  $(1\sim 5)\text{mm}$ , the tolerance  $\pm 0.3\text{mm}$ .; The external dimension  $\geq 5\text{mm}$ , the tolerance  $\pm 0.4\text{mm}$ .
  2. The size tolerance  $\pm 0.1\text{mm}$  in the mounting hole size.
  3. The grid width is  $2.52\text{mm}$ .

© Performance curve

Max. switching power



### Electrical durability curve

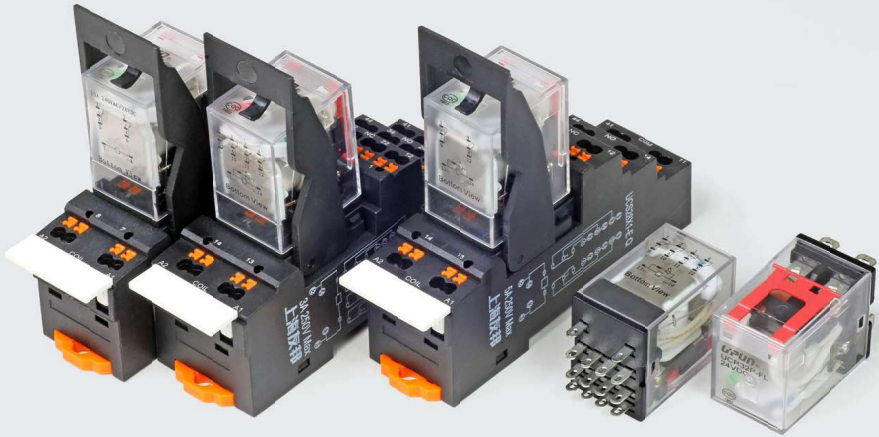


## 1. Test Conditions

NO terminal, resistive load, 250VAC.

Solder Resistant, room temperature, 1s on 9s off





# UCR2/UCR3

## Control relay

### Features

UCR2/UCR3 Control relay has the characteristics of reasonable structure design, great pressure resistance, reliable operation, long service life, convenient installation and use, etc.

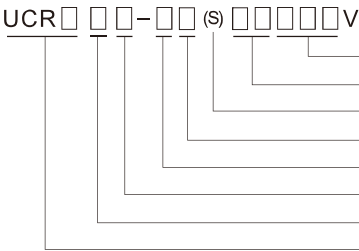
1. There are diverse types which include more than 400 kinds
2. Control supply voltage of coil is DC6~120V, AC12V~240V
3. The range of contact current is wide from 10mA to 10A
4. Reliability, and long service life
5. Transparent dust-proof cover, with LED indicator
6. There are many methods to install it

# UCR2/UCR3 Control relay

## © Technical data

Item	UCR22	UCR23	UCR24	UCR31	UCR32	UCR33	UCR34
Conventional thermal current	5A	5A	3A	15A	10A	10A	10A
Related insulation voltage	250V AC , 125V DC						
Max. operating voltage	110%Us						
Operate time	≤20ms						
Release time	≤20ms						
Switching time of contact	≥0.15ms						
Contact resistance(contact)	≤50mΩ						
Max. operating voltage(contact)	250V AC , 125V DC						
Insulation resistance	≥100MΩ						
Break-down voltage	Between disconnected contacts: AC1100V , 50Hz , 1min; Between contacts: AC2200V , 50Hz , 1min Between contacts and coils:AC2200V , 50Hz , 1min; Between contact/coil and ground: AC1800V , 50Hz , 1min						
Operation frequency	≤ 30 times/1 min						
Vibration resistance	10~55Hz, AT DOUBLE AMPLITUDE OF 1MM1.0mm,1min						
Shock resistance	200m/s <sup>2</sup> , 11ms						
Electrical life	2×10 <sup>5</sup> times						
Mechanical life	AC:2x10 <sup>7</sup> times;DC:5x10 <sup>7</sup> times;						
Weight	approx38g	approx38g	approx38g	approx38g	approx38g	approx55g	approx70g

## © Type no.



- Voltage:DC6~120V,AC6~240V
- DA,AC
- (S): Test rod function
- L:with LED indicators No letter:standard type
- F:inrush type No letter:standard type
- P:plug-in B:PCB
- No. of contact; 2:2 change over; 3:3change over; 4:4 change over
- Design no:
- UCR2 Control relay,related current:5A for UCR22. 23,3A for UCR24
- 5A can be customized, type:UCR24P XXV(5A)
- UCR31 Control relay,related current of contact:15A
- UCR32. UCR34Control relay,related current of contact:10A

## ◎ Max. contact capacity

Type no	Resistive load	Inductive load (AC-15/DC-13)
UCR22 UCR23	DC110V, 0.3A	DC110V, 0.2A
	DC30V, 5A	DC30V, 1A
	AC240V, 5A	AC240V, 1A
UCR24	DC110V, 0.3A	DC110V, 0.2A
	DC30V, 3A	DC30V, 0.5A
	AC240V, 3A	AC240V, 0.5A
UCR31	AC240V, 15A	AC240V, 3A
UCR32 UCR33 UCR34	DC110V, 0.5A	DC110V, 0.3A
	DC30V, 10A	DC30V, 2A
	AC240V, 10A	AC240V, 2A

## ◎ Coil

Related voltage	Pull-in voltage	Release voltage	Pull-in current coil			Pull-in consumption of coil		
			UCR22/UCR23/UCR24 UCR31/UCR32	UCR33	UCR34	UCR22/UCR23/UCR24 UCR31/UCR32	UCR33	UCR34
DC 6V	≤4.5V	≥0.6V	≤200.0mA	≤275mA	≤290mA	approx 0.9W	approx 1.4W	approx 1.5W
DC 12V	≤9.0V	≥1.2V	≤100.0mA	≤140mA	≤145mA			
DC 24V	≤18.0V	≥2.4V	≤50.0mA	≤70mA	≤80mA			
DC 48V	≤36.0V	≥4.8V	≤25.0mA	≤35mA	≤36mA			
DC 110V	≤82.5V	≥11.0V	≤10.9mA	≤16mA	≤18mA			
AC 12V	≤9.6V	≥3.6V	≤134.0mA	≤190mA	≤230mA	approx 1.2VA	approx 2VA	approx 2.5VA
AC 24V	≤19.2V	≥7.2V	≤67.0mA	≤94mA	≤115mA			
AC 48V	≤38.4V	≥14.4V	≤33.5mA	≤47mA	≤58mA			
AC 110V	≤88.0V	≥33.0V	≤14.6mA	≤18.5mA	≤30mA			
AC 220V	≤176.0V	≥66.0V	≤7.3mA	≤11.5mA	≤15mA			

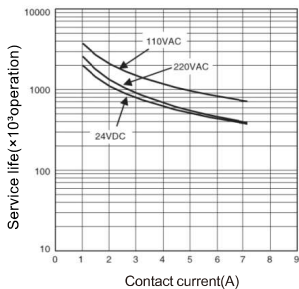
### Notes:

- 1.The parameters are tested at normal temperature(25℃)
- 2.The frequency of AC is 50Hz
- 3.More coils,please consult us for details.

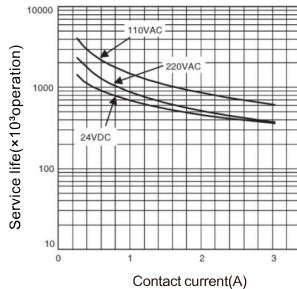
# UCR2 / UCR3 Control relay

## Service life curve

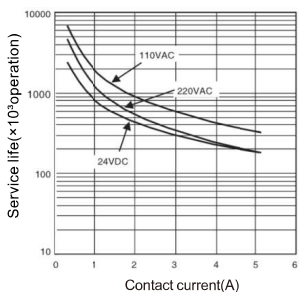
UCR22P/UCR23P (Resistive load )



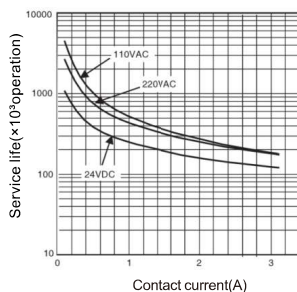
UCR22P/UCR23P ( Inductive load)



UCR24P (Resistive load )

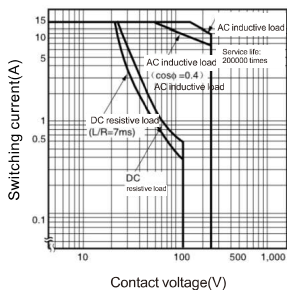


UCR24P (Inductive load)

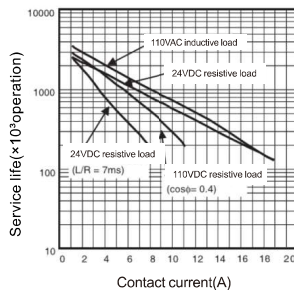


## UCR31P

Max. switching capacity

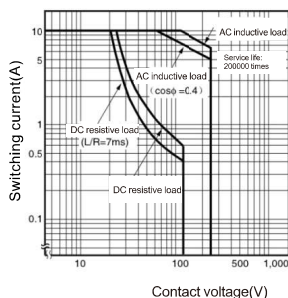


## Service life curve

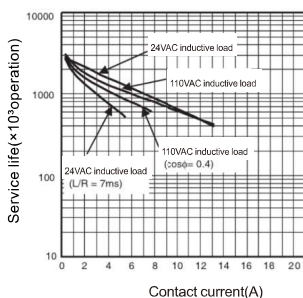


### UCR32P

#### Max. switching capacity

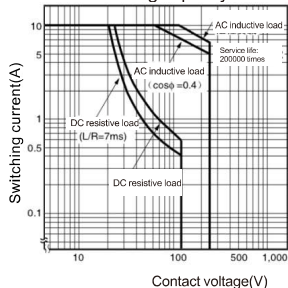


#### Service life curve

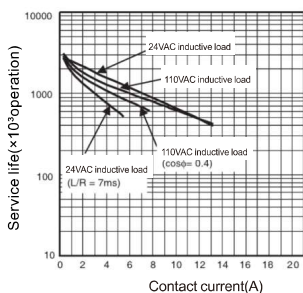


### UCR33P

#### Max. switching capacity

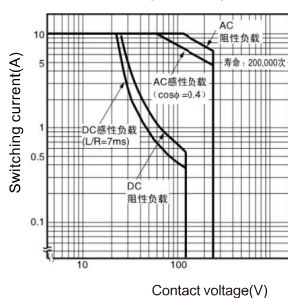


#### Service life curve

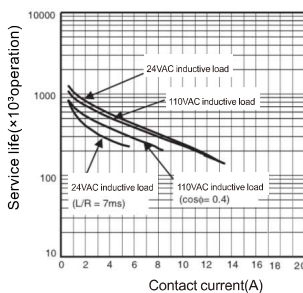


### UCR34P

#### Max. switching capacity

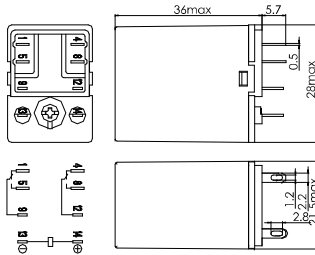


#### Service life curve

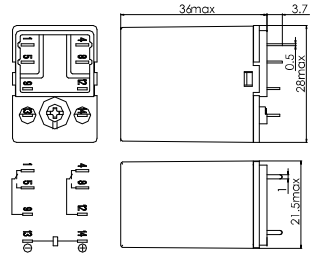


# UCR2 / UCR3 Control relay

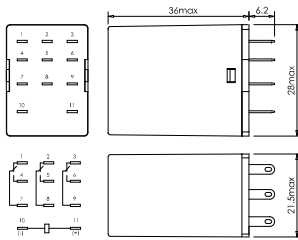
## Overall dimension and wiring diagram



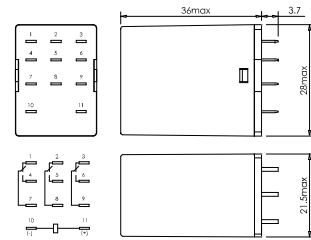
UCR22P Overall dimension and wiring diagram



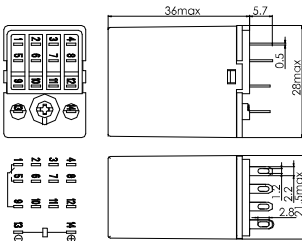
UCR22B Overall dimension and wiring diagram



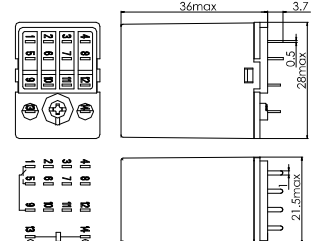
UCR23P Overall dimension and wiring diagram



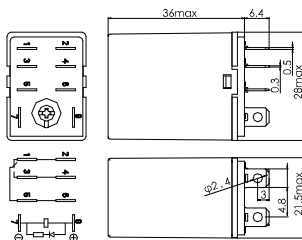
UCR23B Overall dimension and wiring diagram



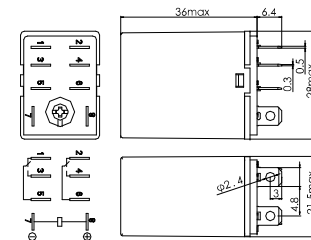
UCR24P Overall dimension and wiring diagram



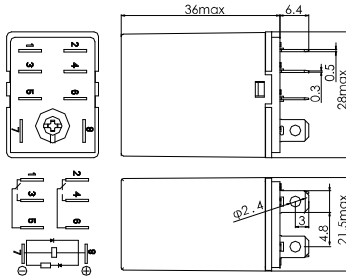
UCR24B Overall dimension and wiring diagram



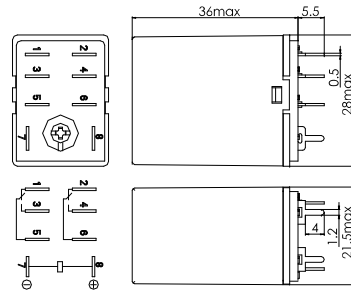
UCR31P-L Overall dimension and wiring diagram



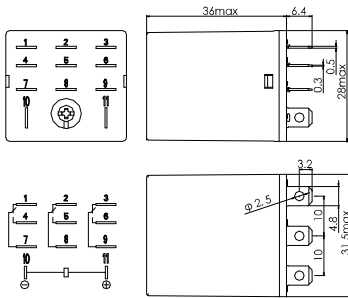
UCR32P Overall dimension and wiring diagram



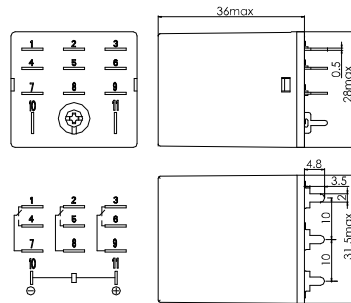
UCR32P-FL Outline and wiring diagram with freewheeling diode



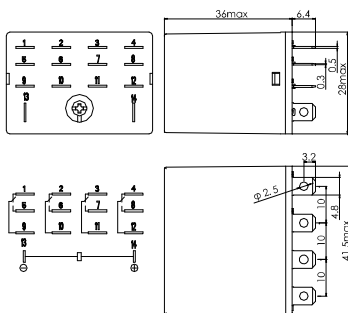
UCR32B Overall dimension and wiring diagram



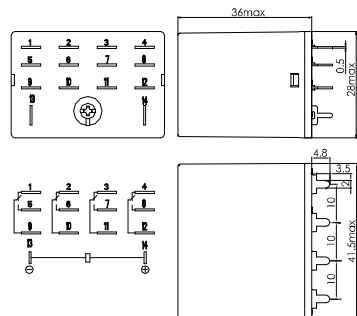
UCR33P Overall dimension and wiring diagram



UCR33B Overall dimension and wiring diagram



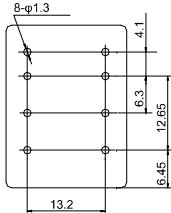
UCR34P Overall dimension and wiring diagram



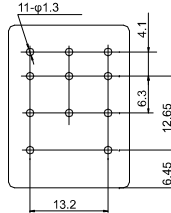
UCR34B Overall dimension and wiring diagram

## UCR2 / UCR3 Control relay

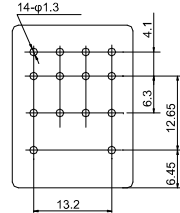
## Overall dimension and wiring diagram



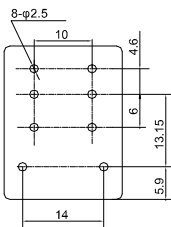
UCR22B The drawing of mounting holes' size



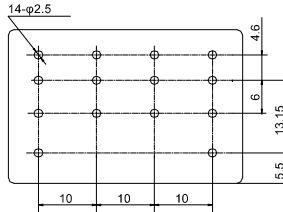
UCR23B The drawing of mounting holes' size



UCR24B The drawing of mounting holes' size



UCR32B The drawing of mounting holes' size



UCR34B The drawing of mounting holes' size

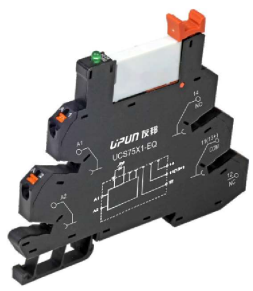
## Notes

1. Notice the coil polarity of polarized relays ( + , - ).
2. It is the basic operation to apply a rated voltage to the coil . But, please apply respectively a rectangular wave and a sine wave to the DC coil and the AC coil.
3. Pay attention to avoid the voltage applied by the coil exceeding the max. allowable voltage.
4. The state or service life of the contacts will be significantly different because of the type of load or various conditions. So, please confirm when using.
4. The recommended installation method of the relay is that the contacts are on the top and the coil is on the bottom.
5. When soldering relays with soldered terminals, manual soldering is recommended. And cleaning should be avoided as much as possible after it.
6. The relay action frequency do not exceed the regulation. Otherwise it may cause malfunction and affect the service life.
7. Using the same polarity between the relay contacts and contacts



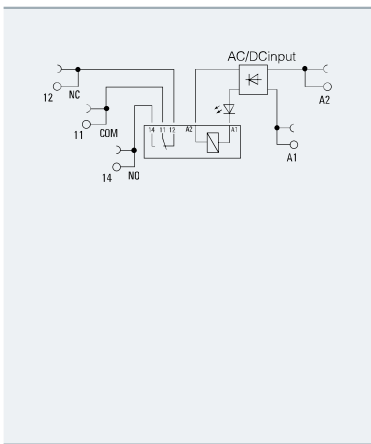


- 1 switching contact
- AC/DC coil
- \* 6.4mm, space saving.
- \* AgSnO contact
- \* Push-in connection



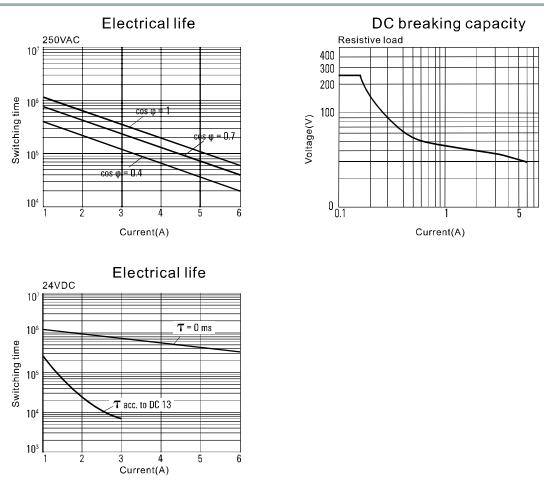
Push-in relay

## Technical data



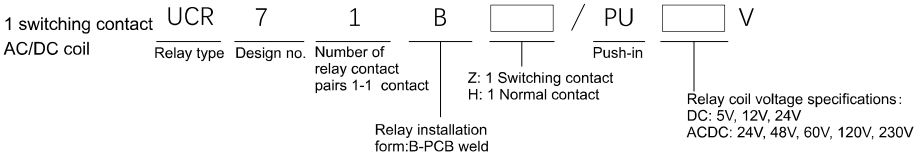
Output data	
Related switching voltage/current(AC)	250V / 6A
Contact material	AgSnO
Mechanical life	1×10 <sup>5</sup> times
Max. switching frequency(related load)	0.1Hz
General data	
Status indication	Green LED
Reverse voltage protection	Have
Work temperature	-40°C...+60°C
Storage temperature	-40°C...+85°C
Environment humidity	5...95%, T <sub>u</sub> =+40°C, Humidity without condensation
Certification	CE
Insulation level(EN 50 178)	
Related voltage	300V
Related surge breakdown voltage	6kV(1.2/50 μ S)
Cree-page distance between nodes	≥6mm
Over-voltage level	III
Pollution level	2
Size	
Wiring range(related/Min./Max.)mm <sup>2</sup>	1.5 / 0.14 / 2.5
length × width × height	mm 80.8 / 6.2 / 96.6

## Application



# Push-in relay

Push-in relay



Notes:  
Contact rated voltage of UCR71 Control relay is 6A.  
If requiring gold-plated contacts, please note when placing an order.

Ordering data	UCR71BZ/PU DC5V	UCR71BZ/PU DC12V	UCR71BZ/PU DC24V	UCR71BZ/PU ACDC24V
Technical data				
Input data				
Related voltage	5VDC±20%	12VDC±20%	24VDC±20%	24VACDC±10%
Related current(AC coil)				11.7mA
Related current(DC coil)	33mA	18mA	11.5mA	6.4mA
Related power	170mW	210mW	280mW	270mVA / 154mW
Operate/release voltage(AC coil)				16V / 5V
Operate/release voltage(DC coil)	4V / 1V	9V / 2V	16V / 3V	20V / 6V
Protect circuit	Rectifier	Rectifier	Rectifier	Rectifier
Output data				
Operate time	≤7ms	≤6ms	≤6ms	≤6ms
Release time	≤6ms	≤8ms	≤16ms	≤40ms

Ordering data	UCR71BZ/PU ACDC48V	UCR71BZ/PU ACDC60V	UCR71BZ/PU ACDC120V	UCR71BZ/PU ACDC230V
Technical data				
Input data				
Related voltage	48VACDC±10%	60VACDC±10%	120VACDC±10%	230VACDC±10%
Related current(AC coil)	8mA	4.8mA	4mA	3.5mA
Related current(DC coil)	7mA	2.8mA	3.5mA	2.9mA
Related power	400mVA / 340mW	290mVA / 170mW	480mVA / 420mW	805mVA / 670mW
Operate/release voltage(AC coil)	32V / 9V	33V / 8V	89V / 50V	164V / 87V
Operate/release voltage(DC coil)	33V / 8.5V	41.5V / 9V	100V / 57V	166V / 89V
Protect circuit	Rectifier	Rectifier	Rectifier	Rectifier
Output data				
Operate time	≤9ms	≤7ms	≤11ms	≤15ms
Release time	≤25ms	≤50ms	≤40ms	≤50ms

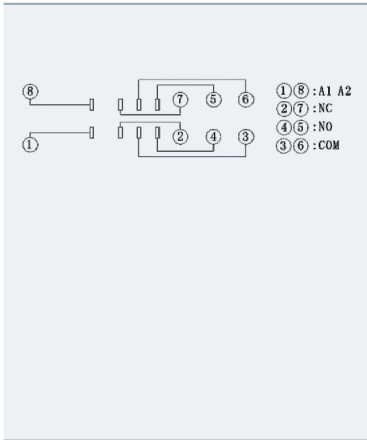
1 switching contact  
AC/DC coil

- \*6.4mm, space saving.
- \*AgSnO contact
- \*Cross-connection at the output
- \*Push-in connection



Push-in relay

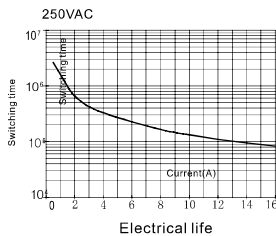
## Technical data



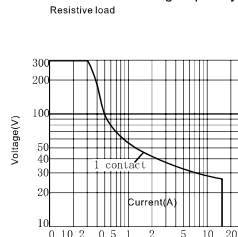
Output data	
Related switching voltage/current(AC)	250V / 16A
Contact material	AgSnO
Mechanical life	1×10 <sup>6</sup> times
Max. switching frequency(related load)	0.1Hz
General data	
Status indication	Optional
Reverse voltage protection	Optional
Work temperature	-40°C...+60°C
Storage temperature	-40°C...+85°C
Environment humidity	5...95%, Tu=40°C, Humidity without condensation
Certification	CE
Insulation level(EN 50 178)	
Related voltage	300V
Related surge breakdown voltage	6kV(1.2/50 μ S)
Cree-page distance between nodes	≥6mm
Over-voltage level	III
Pollution level	2
Size	
Wiring range(related/Min./Max.)mm <sup>2</sup>	1.5 / 0.14 / 2.5
length × width × height	mm 59 / 16 / 99.1

## Application

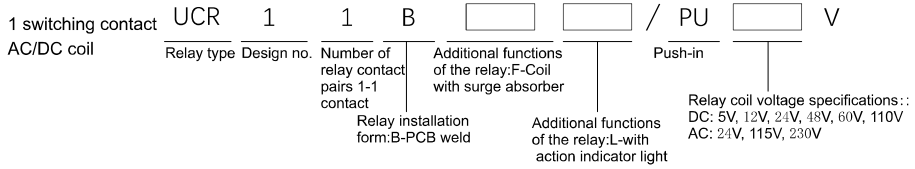
### Electrical life



### DC breaking capacity



# Push-in relay



Notes : Contact rated voltage of UCR11B Control relay is 16A.

Ordering data	UCR11B/PU DC5V	UCR11B/PU DC12V	UCR11B/PU DC24V	UCR11B/PU AC24V	UCR11B/PU DC48V
Technical data					
Relay	UCR11B DC5V	UCR11B DC12V	UCR11B DC24V	UCR11B AC24V	UCR11B DC48V
Push-in relay	UCS18X1B-EQ	UCS18X1B-EQ	UCS18X1B-EQ	UCS18X1B-EQ	UCS18X1B-EQ
Status indication(optional)	Green LED	Green LED	Green LED	Green LED	Green LED
Protect circuit(optional)	Freewheeling diode reverse polarity protection	Freewheeling diode reverse polarity protection	Freewheeling diode reverse polarity protection	RC absorption/pressure sensitive protection	Freewheeling diode reverse polarity protection
Technical data					
Input data					
Related voltage	5VDC±20%	12VDC±20%	24VDC±20%	24VDC±10%	48VDC±10%
Related current	81mA	33mA	17mA	31.6mA	8mA
Related power	400mW	400mW	400mW	760mVA	400mW
Operate/release voltage	3.5V / 0.5VDC	8.4V / 1.2VDC	16.8V / 2.4VDC	18V / 3.6VAC	33.6V / 4.8VDC
Operate/release voltage	56mA / 8mADC	23mA / 3mADC	12mA / 1.6mADC		58mA / 0.8mADC
Output data					
Operate time	≤15ms	≤15ms	≤15ms	≤15ms	≤15ms
Release time	≤15ms	≤15ms	≤15ms	≤15ms	≤15ms

Ordering data	UCR11B/PU DC60V	UCR11B/PU DC110V	UCR11B/PU AC115V	UCR11B/PU AC230V
Technical data				
Relay	UCR11B DC60V	UCR11B DC110V	UCR11B AC115V	UCR11B AC230V
Push-in relay	UCS18X1B-EQ	UCS18X1B-EQ	UCS18X1B-EQ	UCS18X1B-EQ
Status indication(optional)	Green LED	Green LED	Green LED	Green LED
Protect circuit(optional)	Freewheeling diode reverse polarity protection	Freewheeling diode reverse polarity protection	Pressure sensitive protection	Pressure sensitive protection
Technical data				
Input data				
Related voltage	60VDC±10%	110VDC±10%	115VAC±10%	230VAC±5%
Related current	5mA	3mA	6.6mA	3.2mA
Related power	400mW	400mW	760mVA	760mVA
Operate/release voltage	42V / 6.0VDC	77V / 11VDC	86.3V / 17.3VAC	172.5V / 34.5VAC
Operate/release voltage	6mA / 0.8mADC	3mA / 0.4mADC		
Output data				
Operate time	≤15ms	≤15ms	≤15ms	≤15ms
Release time	≤15ms	≤15ms	≤15ms	≤15ms

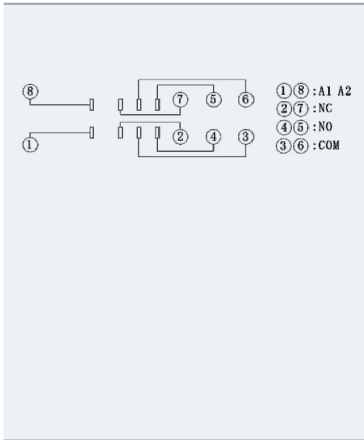
2 switching contact  
AC/DC coil

- \* 12.8mm width, space saving.
- \* AgSnO contact
- \* Push-in connection



Push-in relay

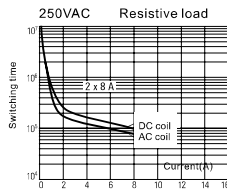
## Technical data



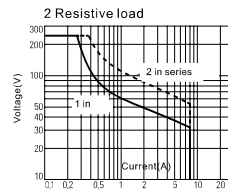
Output data	
Related switching voltage/current(AC)	250V / 8A
Contact material	AgSnO
Mechanical life	1×10 <sup>6</sup> times
Max. switching frequency(related load)	0.1Hz
General data	
Status indication	Optional
Reverse voltage protection	Optional
Work temperature	-40°C...+60°C
Storage temperature	-40°C...+85°C
Environment humidity	5...95%, Tu=40°C, Humidity without condensation
Certification	CE
Insulation level(EN 50 178)	
Related voltage	300V
Related surge breakdown voltage	6kV(1.2/50 μ S)
Cree-page distance between nodes	≥6mm
Over-voltage level	III
Pollution level	2
Size	
Wiring range(related/Min./Max.)mm <sup>2</sup>	1.5 / 0.14 / 2.5
length × width × height	mm 59 / 16 / 99.1

## Application

### Electrical life



### DC breaking capacity



# Push-in relay

1 switching contact UCR 1 2 B     / PU   V

AC/DC coil Relay type Design no. Number of relay contact pairs 1-1 contact Additional functions of the relay: F-Coil with surge absorber Relay installation form: B-PCB weld Additional functions of the relay: L-with action indicator light Push-in Relay coil voltage specifications: DC: 5V, 12V, 24V, 48V, 60V, 110V AC: 24V, 115V, 230V

Notes : Contact rated voltage of UCR12B Control relay is 8A.

Ordering data	UCR12B/PU DC5V	UCR12B/PU DC12V	UCR12B/PU DC24V	UCR12B/PU AC24V	UCR12B/PU DC48V
Technical data					
Relay	UCR12B DC5V	UCR12B DC12V	UCR12B DC24V	UCR12B AC24V	UCR12B DC48V
Push-in relay	UCS18X1B-EQ	UCS18X1B-EQ	UCS18X1B-EQ	UCS18X1B-EQ	UCS18X1B-EQ
Status indication(optional)	Green LED	Green LED	Green LED	Green LED	Green LED
Protect circuit(optional)	Freewheeling diode reverse polarity protection	Freewheeling diode reverse polarity protection	Freewheeling diode reverse polarity protection	RC absorption/pressure sensitive protection	Freewheeling diode reverse polarity protection
Technical data					
Input data					
Related voltage	5VDC±20%	12VDC±20%	24VDC±20%	24VAC±10%	48VDC±10%
Related current	81mA	33mA	17mA	31.6mA	8mA
Related power	400mW	400mW	400mW	760mVA	400mW
Operate/release voltage	3.5V / 0.5VDC	8.4V / 1.2VDC	16.8V / 2.4VDC	18V / 3.6VAC	33.6V / 4.8VDC
Operate/release voltage	56mA / 8mADC	23mA / 3mADC	12mA / 1.6mADC		58mA / 0.8mADC
Output data					
Operate time	≤15ms	≤15ms	≤15ms	≤15ms	≤15ms
Release time	≤15ms	≤15ms	≤15ms	≤15ms	≤15ms

Ordering data	UCR12B/PU DC60V	UCR12B/PU DC110V	UCR12B/PU AC115V	UCR12B/PU AC230V
Technical data				
Relay	UCR12B DC60V	UCR12B DC110V	UCR12B AC115V	UCR12B AC230V
Push-in relay	UCS18X1B-EQ	UCS18X1B-EQ	UCS18X1B-EQ	UCS18X1B-EQ
Status indication(optional)	Green LED	Green LED	Green LED	Green LED
Protect circuit(optional)	Freewheeling diode reverse polarity protection	Freewheeling diode reverse polarity protection	Pressure sensitive protection	Pressure sensitive protection
Technical data				
Input data				
Related voltage	60VDC±10%	110VDC±10%	115VAC±10%	230VAC±5%
Related current	5mA	3mA	6.6mA	3.2mA
Related power	400mW	400mW	760mVA	760mVA
Operate/release voltage	42V / 6.0VDC	77V / 11VDC	86.3V / 17.3VAC	172.5V / 34.5VAC
Operate/release voltage	6mA / 0.8mADC	3mA / 0.4mADC		
Output data				
Operate time	≤15ms	≤15ms	≤15ms	≤15ms
Release time	≤15ms	≤15ms	≤15ms	≤15ms

◎ Luminescent and anti-surge absorbing modules

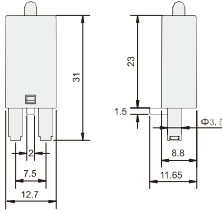


Socket type:  
UCS15X1-EQ  
UCS18X1-EQ  
UCS15X1B-EQ  
UCS18X1B-EQ

Type	Schematic diagram	Voltage	Internal elements			Functions
			Rectifier diode (1N4007)	LED (Φ3)	Metal resistor	
LM-AA		(6~220)VDC	●			● Coil protected by diodes which can eliminate reverse current
LM-AB		(6~220)VDC	●			● Coil protected by diodes which can eliminate reverse current
LM-BC(R) LM-BC(G)		(6~24)VDC	●	●	3.3K(1/4W)	● Coil protected by diodes which can eliminate reverse current ● LED display
LM-BD(R) LM-BD(G)		(24~60)VDC	●	●	6.8K(1/4W)	● Coil protected by diodes which can eliminate reverse current ● LED display
LM-BE(R) LM-BE(G)		(110~230)VDC	●	●	100K(1/4W)	● Coil protected by diodes which can eliminate reverse current ● LED display

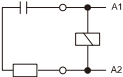
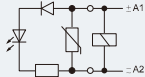
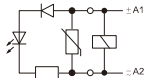
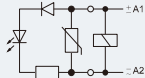
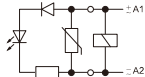
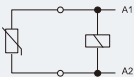

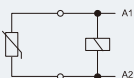
## Push-in relay Accessories

### ◎ Luminescent and anti-surge absorbing modules



Type	Schematic diagram	Voltage	Internal elements				Functions
			Rectifier diode (1N4007)	LED ( $\phi 3$ )	Metal resistor	Others	
LM-CF(R) LM-CF(G)		(6~24)VDC	●	●	3.3K(1/4W)		<ul style="list-style-type: none"> <li>● Coil protected by diodes which can eliminate reverse current</li> <li>● LED display</li> </ul>
LM-CG(R) LM-CG(G)		(24~60)VDC	●	●	6.8K(1/4W)		<ul style="list-style-type: none"> <li>● Coil protected by diodes which can eliminate reverse current</li> <li>● LED display</li> </ul>
LM-CH(R) LM-CH(G)		(110~230)VDC	●	●	100K(1/4W)		<ul style="list-style-type: none"> <li>● Coil protected by diodes which can eliminate reverse current</li> <li>● LED display</li> </ul>
LM-DI		(6~24)V AC/DC			56K(1/4W)	Ceramic capacitor 103/50V	<ul style="list-style-type: none"> <li>● Coil protected by RC circuit which absorbs excessive current during instant start</li> </ul>
LM-DJ		(24~60)V AC/DC			100K(1/4W)	Ceramic capacitor 103/150V	<ul style="list-style-type: none"> <li>● Coil protected by RC circuit which absorbs excessive current during instant start</li> </ul>



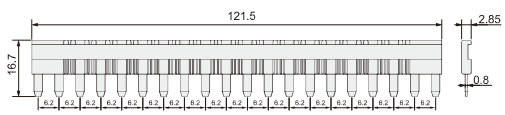
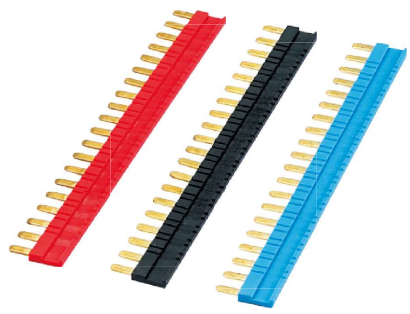
Type	Schematic diagram	Voltage	Internal elements				Functions
			Rectifier diode (1N4007)	LED (Φ3)	Metal resistor	Others	
LM-DK		(110~230)V AC/DC			330K(1/4W)	Ceramic capacitor 103/500V	● Coil protected by RC circuit which absorbs excessive current during instant start
LM-FO(R) LM-FO(G)		(6~24)V AC/DC	●	●	3.3K(1/4W)	Varistor 05D390K	● Coil protected by diodes which can eliminate reverse current ● LED display ● Parallel resistors to absorb surges
LM-FR(R) LM-FR(G)		(12~48)V AC/DC	●	●	6.2K(1/4W)	Varistor 05D361K	● Coil protected by diodes which can eliminate reverse current ● LED display ● Parallel resistors to absorb surges
LM-FP(R) LM-FP(G)		(24~60)V AC/DC	●	●	6.8K(1/4W)	Varistor 05D101K	● Coil protected by diodes which can eliminate reverse current ● LED display ● Parallel resistors to absorb surges
LM-FQ(R) LM-FQ(G)		(110~230)VAC 100VDC	●	●	100K(1/4W)	Varistor 05D361K	● Coil protected by diodes which can eliminate reverse current ● LED display ● Parallel resistors to absorb surges
LM-GR		24VAC				Varistor 05D390K	● Parallel resistors to absorb surges
LM-GS		115VAC				Varistor 05D181K	● Parallel resistors to absorb surges
LM-GT		230VAC				Varistor 05D361K	● Parallel resistors to absorb surges

## Note:

If there are LED in the module, please mark (R) or (G) behind order marks to indicate the color of the indicator light. Such as: LM-BC® or LM-BC(G), R--Red, G--Green.

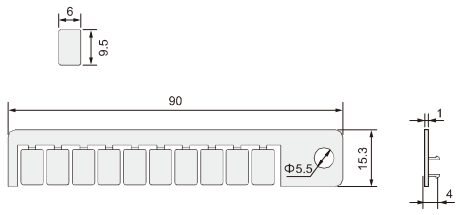
# Push-in relay Accessories

## ⦿ Jumper



Type	Color
41F-J1R	Red
41F-J1	Black
41F-J1B	Blue

## ⦿ F-34 Marker strip





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