

**General purpose relays**  
**HH22, 23, 24**

■ **Description**

These high quality general purpose relays are suitable for multi-pole switching and, although economically priced, are dependable and sturdily constructed. They are available with coil voltages 24–130V DC and 24–240V AC with continuous current ratings of either 4 or 6 Amps. Standard contact buttons are silver. Contact arrangements are 2PDT, 3PDT and SPDT+2NO+1NC. Relays are enclosed in a polycarbonate dust cover with octal type 8 or 11 pin plugs.

■ **Versions**

**Operating status indicator**

**LED indicator**  
Up to 48V DC

**Neon lamp indicator**  
Over 48V AC

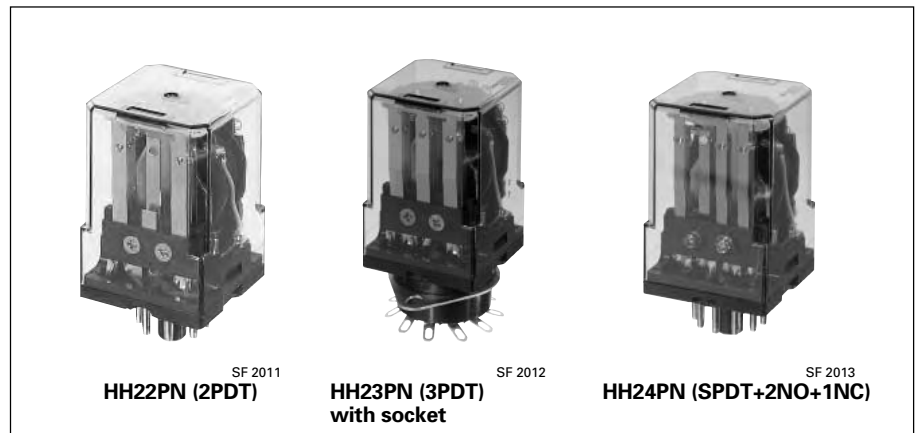
These relays can be supplied with a visual operating indicator which greatly simplifies troubleshooting in all types of electrical control equipment.

**Dual coil magnetically held**

A momentary pulse to one of two coils results in the contacts being firmly held in one of two positions without further flow of current.

This gives this class of relays a good memory stability since it will retain a permanent latch position despite a loss of power.

Coil ratings are 24–220V AC and 24–110V DC.

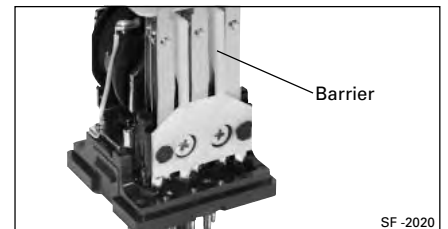


**Surge suppression**

SF -2019

We can supply the relays with surge suppression device. These relays can be applied for AC and DC operation.

**Arc-barrier**



The HH23PN-B is provided with arc-barriers which gives it protection from excessive loads. It can safely be used on polarized circuits and even small motor loads.

■ **Type number nomenclature**

**HH23PN-JBL AC110V50Hz**

**Basic type** ———— H H 2 3 P N - □ J B L

**Contact arrangement** ———— P N

2 : 2PDT  
3 : 3PDT  
4 : SPDT+2NO+1NC

**Coil voltage** ———— AC110V50Hz

AC: 24 to 240V AC  
DC: 24 to 130V DC

**Mounting method** ———— □

P: Plug-in

**Indicators** ———— B L

Blank : Without indicator  
L : With indicator (neon-lamp or LED)

**Contact form** ———— J B L

N : Single  
W : Bifurcated

**Versions** ———— J B L

B : With arc-barrier  
F : With surge suppression device  
BF : With arc barrier and surge suppression device  
R : Magnetically held type  
RB : Magnetically held type with arc barrier

**Wiring** ————

Blank : Wiring A (Standard)  
T : Wiring B  
K : Wiring C (See page 03/44.)

**Contact** ————

Blank : Ag (standard)  
J : Au-plated Ag

Note: HH24PN type and relays with bifurcated contacts cannot be provided with arc barrier.

■ **Ordering information**

Specify the following:  
 1. Ordering code or type number

# Industrial Control Relays

## General purpose relays

### HH22, 23, 24

#### ■ Versions (Plug-in mounting)

#### Relays

Classification		Contact form and arrangement		Wiring diagram A		Wiring diagram B		Wiring diagram C	
				Type	Ordering code	Type	Ordering code	Type	Ordering code
Standard	Without LED	Single	2PDT	HH22PN	RC2CP-■	HH22PN-T	RC2CPT-■	HH22PN-K	
			3PDT	HH23PN	RC3CP-■	HH23PN-T	RC3CPT-■	HH23PN-K	RC3CPK-■
			2NO+1NC+SPDT	HH24PN	RC4MP-■	-	-	-	-
	Bifurcated	2PDT	HH22PW	RC2CPW-■	HH22PW-T	RC2CPWT-■	HH22PW-K		
		3PDT	HH23PW	RC3CPW-■	HH23PW-T	RC3CPWT-■	HH23PW-K	RC3CPWK-■	
		2NO+1NC+SPDT	HH24PW	RC4MPW-■	-	-	-	-	
With LED	Single	2PDT	HH22PN-L	RC2CPL-■	HH22PN-TL	RC2CPTL-■	HH22PN-KL		
			3PDT	HH23PN-L	RC3CPL-■	HH23PN-TL	RC3CPTL-■	HH23PN-KL	RC3CPKL-■
			2NO+1NC+SPDT	HH24PN-L	RC4MPL-■	-	-	-	-
	Bifurcated	2PDT	HH22PW-L	RC2CPWL-■	HH22PW-TL	RC2CPWTL-■	HH22PW-KL		
		3PDT	HH23PW-L	RC3CPWL-■	HH23PW-TL	RC3CPWTL-■	HH23PW-KL	RC3CPWKL-■	
		2NO+1NC+SPDT	HH24PW-L	RC4MPWL-■	-	-	-	-	
With surge suppression device	Without LED	Single	2PDT	HH22PN-F	RC2CPF-■	HH22PN-TF	RC2CPTF-■	HH22PN-KF	
			3PDT	HH23PN-F	RC3CPF-■	HH23PN-TF	RC3CPTF-■	HH23PN-KF	RC3CPKF-■
			2NO+1NC+SPDT	HH24PN-F	RC4MPF-■	-	-	-	-
	Bifurcated	2PDT	HH22PW-F	RC2CPWF-■	HH22PW-TF	RC2CPWTF-■	HH22PW-KF		
		3PDT	HH23PW-F	RC3CPWF-■	HH23PW-TF	RC3CPWTF-■	HH23PW-KF	RC3CPWKF-■	
		2NO+1NC+SPDT	HH24PW-F	RC4MPWF-■	-	-	-	-	
With LED	Single	2PDT	HH22PN-FL	RC2CPG-■	HH22PN-TFL	RC2CPTG-■	HH22PN-KFL		
			3PDT	HH23PN-FL	RC3CPG-■	HH23PN-TFL	RC3CPTG-■	HH23PN-KFL	RC3CPKG-■
			2NO+1NC+SPDT	HH24PN-FL	RC4MPG-■	-	-	-	-
	Bifurcated	2PDT	HH22PW-FL	RC2CPWG-■	HH22PW-TFL	RC2CPWTG-■	HH22PW-KFL		
		3PDT	HH23PW-FL	RC3CPWG-■	HH23PW-TFL	RC3CPWTG-■	HH23PW-KFL	RC3CPWKG-■	
		2NO+1NC+SPDT	HH24PW-FL	RC4MPWG-■	-	-	-	-	
With arc barrier	Without LED	Single	2PDT	(HH22PN	RC2CP-■)	(HH22PN-T	RC2CPT-■)	(HH22PN-K	
			3PDT	HH23PN-B	RC3CPB-■	HH23PN-TB	RC3CPBT-■	HH23PN-KB	RC3CPBK-■
	Bifurcated	2PDT	(HH22PW	RC2CPW-■)	(HH22PW-T	RC2CPWT-■)	(HH22PW-K		
With LED	Single	2PDT	(HH22PN-L	RC2CPL-■)	(HH22PN-TL	RC2CPTL-■)	(HH22PN-KL		
		3PDT	HH23PN-BL	RC3CPBL-■	HH23PN-TBL	RC3CPBT-■	HH23PN-KBL	RC3CPBKL-■	
Bifurcated	2PDT	(HH22PW-L	RC2CPWL-■)	(HH22PW-TL	RC2CPWTL-■)	(HH22PW-KL			
With arc barrier and surge suppression device	Without LED	Single	2PDT	(HH22PN-F	RC2CPF-■)	(HH22PN-TF	RC2CPTF-■)	(HH22PN-KF	
			3PDT	HH23PN-BF	RC3CPBF-■	HH23PN-TBF	RC3CPBT-■	HH23PN-KBF	RC3CPBKF-■
	Bifurcated	2PDT	(HH22PW-F	RC2CPWF-■)	(HH22PW-TF	RC2CPWTF-■)	(HH22PW-KF		
With LED	Single	2PDT	(HH22PN-FL	RC2CPG-■)	(HH22PN-TFL	RC2CPTG-■)	(HH22PN-KFL		
		3PDT	HH23PN-BFL	RC3CPBG-■	HH23PN-TBFL	RC3CPBTG-■	HH23PN-KBFL	RC3CPBKG-■	
Bifurcated	2PDT	(HH22PW-FL	RC2CPWG-■)	(HH22PW-TFL	RC2CPWTG-■)	(HH22PW-KFL			
Magnetically held	Without LED	Single	2PDT	HH22PN-R	RC2CPR-■	-	-	-	
			1NO+1NC+SPDT	HH23PN-R	RC3MPR-■	-	-	-	
		Bifurcated	2PDT	HH22PW-R	RC2CPWR-■	-	-	-	
Magnetically held with arc barrier	Without LED	Single	2PDT	(HH22PN-R	RC2CPR-■)	-	-	-	
			1NO+1NC+SPDT	HH23PN-RB	RC3MPRB-■	-	-	-	
		Bifurcated	2PDT	(HH22PW-R	RC2CPWR-■)	-	-	-	

Notes: ■ Enter the coil voltage code in the ■ mark.

• Although the type in parenthesis denotes a relay having no arc barriers, it has good insulation performance equal to the relay with arc barriers, as it has enough insulation distance between contacts.

#### Sockets

Description	Type	Ordering code	Used with
Soldering	8-pin	8GB	HH22P
	11-pin	11GB	HH23P, 24P
Surface mounting screw terminal	8-pin	TP38S	HH22P
	11-pin	TP311S	HH23P, 24P
Rail mounting, screw terminal	8-pin	TP38X	HH22P
	11-pin	TP311X	HH23P, 24P
Hold-down Spring		FX1B	Front connection
		FX1C	Rear connection

#### ■ Operating current and electrical durability

Voltage	Current (A)		Electrical durability (10 <sup>3</sup> operations)	
	Make	Break	HH22PN, 23PN, 24PN HH22PW, 23PW	HH24PW
200V AC Ind. load	15 *1	3 *2	200	100
	10	1	600	300
200V AC Res. load	3	0.3	2400	1200
	1	1	800	400
24V DC Ind. load	1 *3	1 *3	3000	1500
	0.3	0.3	600	300
100V DC Res. load	0.5	0.5	3000	1500
	0.1	0.1	1000	500
24V DC Res. load	3	3	5000	4000
	0.5	0.5	600	300
			5000	3000

Note: Power factor: \*1 cos =0.7 \*2 cos =0.3 to 0.4

Time constant: \*3 T=15ms

■ **Specifications**

Basic type		<b>HH22P</b>	<b>HH23P</b>	<b>HH24P</b>
Rated thermal current (A)		6	6	4
Rated insulation voltage		250V		
Pick-up voltage (at 20°C)	AC DC	80% of rated voltage 75% of rated voltage		
Drop-out voltage (at 20°C)	AC DC	30% of rated voltage 10% of rated voltage		
Max. power supply voltage	AC DC	110% of rated voltage 130% of rated voltage		
Operating temperature		-20 to +40°C, avoid icing		
Dielectric strength		2000V AC rms., 1minute between coil and contact 2000V AC rms., 1minute between poles 1500V AC rms., 1minute between open contacts 2000V AC rms., 1minute between socket terminals		
Insulation resistance		100M (500V DC megger)		
Operating time		20ms or less		
Vibration		Mechanical and malfunction durability: 10 to 55Hz, 0.75mm double amplitude		
Shock		Malfunction durability: 60m/s <sup>2</sup> Mechanical durability: 500m/s <sup>2</sup>		
Durability	Mechanical Electrical	50 million operations See page 03/42		
Contact resistance		50m max. before use		
Contact material		Silver-alloy		

■ **Coil characteristics**

• **AC coil**

Rated voltage (V)	Coil voltage code	Rated current (mA)		Coil resistance ( )	Coil color	Power consumption (VA)	
		50Hz	60Hz			50Hz	60Hz
24	<b>AE</b>	137	125	53	Clear	3.3	3
48	<b>AF</b>	69	63	230	Clear		
100	<b>A1</b>	33	30	900	Green		
200	<b>A2</b>	16	15	3960	Yellow		
220	<b>AM</b>	15	13	4520	Clear		

Note: Other voltages between 24V and 240V AC are available.

• **DC coil**

Rated voltage (V)	Code voltage code	Rated current (mA)	Coil resistance ( )	Coil color	Power consumption (W)
24	<b>DE</b>	67	360	Reddish brown	1.6
48	<b>DF</b>	33	1460	Red	
100	<b>D1</b>	16	6260	Blue	
110	<b>DH</b>	16	7570	Clear	

Note: Other voltages between 24V and 130V DC are available.

■ **UL and CSA approved**

UL file No. E42419  
 CSA file No. LR20479

● **Relays**

Contact	Wiring	Type	Ordering code
2PDT Single	A	<b>HH22PN-UL</b>	RC2CP-■ZU
	C	<b>HH22PN-K-UL</b>	RC2CPK-■ZU
Bifurcated	A	<b>HH22PW-UL</b>	RC2CPW-■ZU
	C	<b>HH22PW-K-UL</b>	RC2CPWK-■ZU
3PDT Single	A	<b>HH23PN-UL</b>	RC3CP-■ZU
	B	<b>HH23PN-T-UL</b>	RC3CPT-■ZU
Single	C	<b>HH23PN-K-UL</b>	RC3CPK-■ZU
	A	<b>HH23PW-UL</b>	RC3CPW-■ZU
Bifurcated	B	<b>HH23PW-T-UL</b>	RC3CPWT-■ZU
	C	<b>HH23PW-K-UL</b>	RC3CPWK-■ZU

Note: Enter the coil voltage code in the ■ mark.

● **Socket**

Type	Ordering code	Used with	Type	Ordering code	Used with
<b>8GB-UL</b>	RX8G-ZU	HH22P	<b>11GB-UL</b>	RX1G-ZU	HH23P

●  **Ratings**

Type	Contact ratings			
	Voltage	Single-phase motor (HP)	Resistive load (A)	Inductive load (A)
HH22P□-UL	120V AC	1/4	6	2
HH22P□-T-UL	240V AC	1/2	6	-
HH23P□-UL	30V DC	-	6	3 (15ms)
HH23P□-T-UL	120V DC	-	0.5	0.3 (15ms)

Note: ( ) : Time constant

# Industrial Control Relays

## General purpose relays

### HH22, 23, 24

#### ■ Lloyd approved

Type	Ordering code	Voltage	Contact Arrangement	Form	Continuous current (A)	Approved No.
HH22PN HH23PN HH24PN	RX2CP-■ZL RX3CP-■ZL RX4MP-■ZL	6 to 220V AC 50/60Hz 6 to 110V DC	2PDT 3PDT 2NO+1NC+SPDT	Single	6	YKA052811
HH22PN-T HH23PN-T	RX2CPT-■ZL RX3CPT-■ZL		2PDT 3PDT		4	
HH22PW HH23PW HH24PW	RX2CPW-■ZL RX3CPW-■ZL RX4MPW-■ZL		2PDT 3PDT 2NO+1NC+SPDT		6	
HH22PW-T HH23PW-T	RX2CPWT-■ZL RX3CPWT-■ZL		2PDT 3PDT	4		
				Bifurcated	6	
					4	
					6	

Note: Enter the coil voltage code in the ■ mark.

#### ■ Internal wirings

##### ● Standard

###### Wiring A

HH22PN  
HH22PW

HH23PN  
HH23PW

HH24PN  
HH24PW

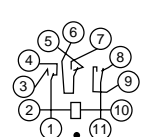
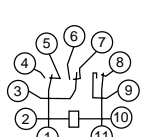
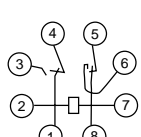
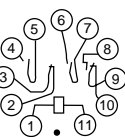
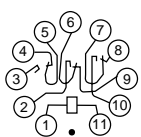
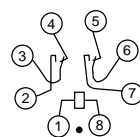
###### Wiring B

HH22PN-T  
HH22PW-T

HH23PN-T  
HH23PW-T

###### Wiring C

HH23PN-K  
HH23PW-K



##### ● With operation indicator

HH22PN-L  
HH22PW-L

HH22PN-TL  
HH22PW-TL

HH23PN-L  
HH23PW-L

HH23PN-TL  
HH23PW-TL

100, 200V

24, 48V\*

100, 200V

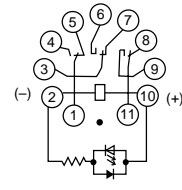
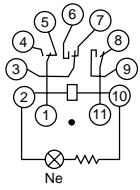
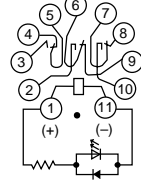
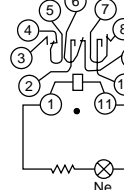
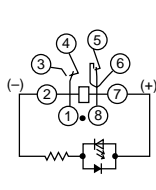
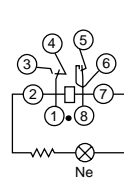
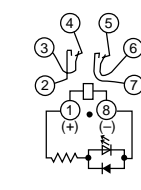
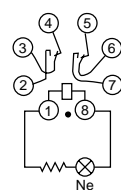
24, 48V\*

100, 200V

24, 48V\*

100, 200V

24, 48V\*



\*Be careful that DC coil terminals have polarity

##### ● With surge suppression device (DC coil)

HH22PN-F  
HH22PW-F

HH22PN-TF  
HH22PW-TF

HH23PN-F  
HH23PW-F

HH23PN-TF  
HH23PW-TF

##### ● With surge suppression device (AC coil)

HH22PN-F  
HH22PW-F

HH22PN-TF  
HH22PW-TF

HH23PN-F  
HH23PW-F

HH23PN-TF  
HH23PW-TF

