HIR Impulse relay

- **Reliable Quality**
  Continue operation 10000 times action reliable and accurately respond to commands
- **Hum Free**
  Reduce the Pull-in noise
- **Hide the clamp holder**
  The concealed lamp had patented make an auxiliary that is more flexible and easy to mounting, which not only improves the aesthetics of the product,but also increases the strength of the device
- **Class H high temperature resistant enameled wire**
  Automatic winding process to ensure reliable opening and closing of the coil
- **Easy Operation**
  Through O-I shift to priority manual control directly. The handle position as mechanical indicator

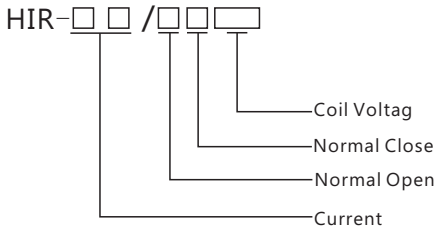
1 Applicable scope

HIR series impulse relay coils are triggered by impulses and the contacts are closed. The product has two stable mechanical positions, and the contacts will open temporarily with the next impulse. Each received impulse will reverse the position of the contact and can be controlled by an unlimited number of buttons. And has the characteristics of zero power consumption.

Impulse relay can be used to control the lighting circuit through the button. The circuit consists of incandescent lamps, halogen lamps, etc. (resistive load); fluorescent lamps, discharge lamps, etc. (inductive load).

Conform to standard: IEC/EN 60669-2-1,IEC/EN 60669-2-2

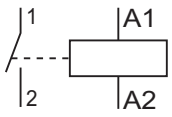
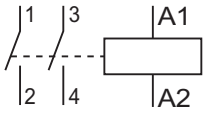
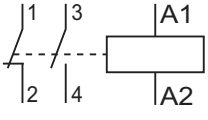
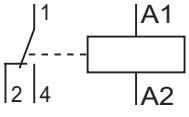
2 Type and Meaning



(eg.HIR-16/10 DC12V,It is16A,1NO,12V DC current coil voltage)

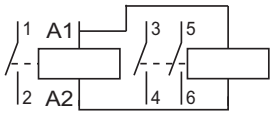
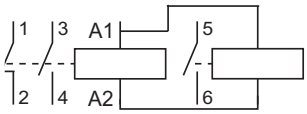
3 Product specification

AC 2P,1modules

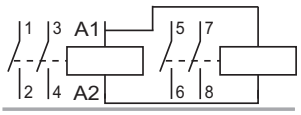
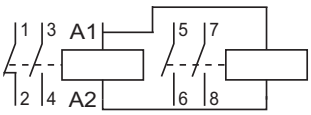
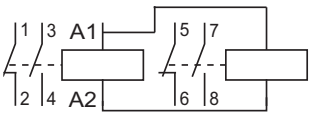
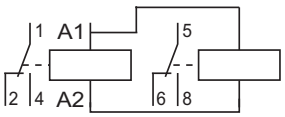
Contactor Model	Ie	Uc (V)(50Hz)	Circuit Diagram
HIR-16/10	16A		
HIR-16/20	16A	AC24V/DC12V AC48V/DC24V	
HIR-16/11	16A	AC110V/DC48V AC230V/DC110V	
HIR-16/1C	16A		

HIR Impulse Relays

AC 3P,2modules

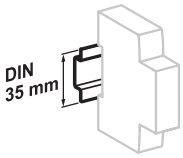
Contactor Model	Ie	Uc (V)(50Hz)	Circuit Diagram
HIR-16/30	16A	AC24V/DC12V AC48V/DC24V	
HIR-16/21	16A	AC110V/DC48V AC230V/DC110V	

AC 4P,2modules

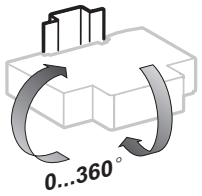
Contactor Model	Ie	Uc (V)(50Hz)	Circuit Diagram
HIR-16/40	16A	AC24V/DC12V AC48V/DC24V AC110V/DC48V AC230V/DC110V	
HIR-16/31	16A		
HIR-16/22	16A		
HIR-16/2C	16A		

4 Main parameter and technical performance

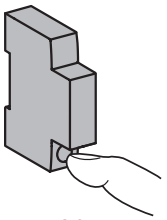
Control circuit		
Dissipated power (during the impulse)		19 VA
Illuminated PB control		Max. current 3 mA (if > use an ATLz)
Operating threshold		Min. 85 % of Un
Duration of the control order		50ms to 1s (200ms recommended)
Response time		50ms
Power circuit		
Voltage rating (Ue)	1P,2P	250V AC
Frequency		50/60Hz
Maximum number of operations per minute		5
Maximum number of switching operation per day		100
Endurance		200,000 cycles (AC21)
		100,000 cycles (AC22)
Overvoltage category		IV
Insulation voltage (Ui)		440V AC
Pollution degree		3
Rated impulse withstand voltage (Uimp)		6kV
Degree of protection (IEC 60529)	Device only	IP20
	Device in modular	IP40（Insulation class II)
Operating temperature		-5℃~+60℃
Storage temperature		-40℃~+70℃
Tropicalization(IEC 60068.1)		Treatment 2 relative humidity 95 % at 55℃



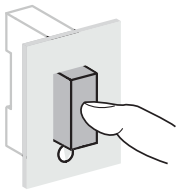
Clip on DIN rail 35 mm



In different position of installation

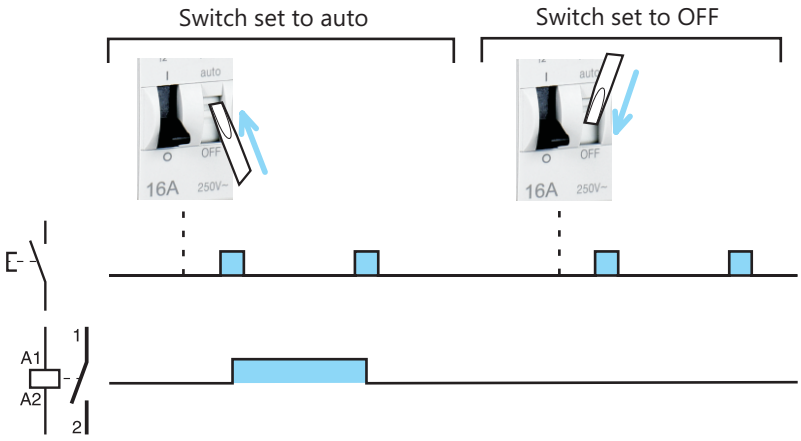


IP20

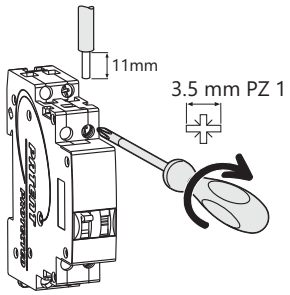


IP40

5 Operation(Impluse relay)



6 Impulse relay connection and auxiliary

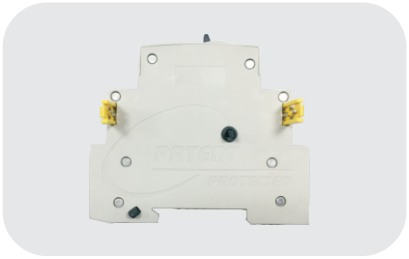


Type	Rating	Circuit	Tightening torque	Copper cables	
				Rigid or ferrule	Flexible or ferrule
					
HIR	16A	Control	1N.m	0.5~4mm²	1~4mm²
		Power		1.5~4mm²	1.5~4mm²

	Yellow clips	Spacer
		
Function	Ensure the mechanical and / or electrical link between impulse relays and their auxiliaries	Required to reduce temperature rise of modular devices installed side by side Recommended to separate electronic devices (thermostat, programmable clock, etc) from electromechanical devices (relays, contactors)
Technical specifications	-	9mm Multiples

7 Impulse relay multi-pole connection description

Connection ring 1 piece
Connection lever 1 piece
Connection block 1 Piece
Hide Clamp holder 2 pieces



Put Connection ring , connection lever, connection block and hide clamp holder in slot

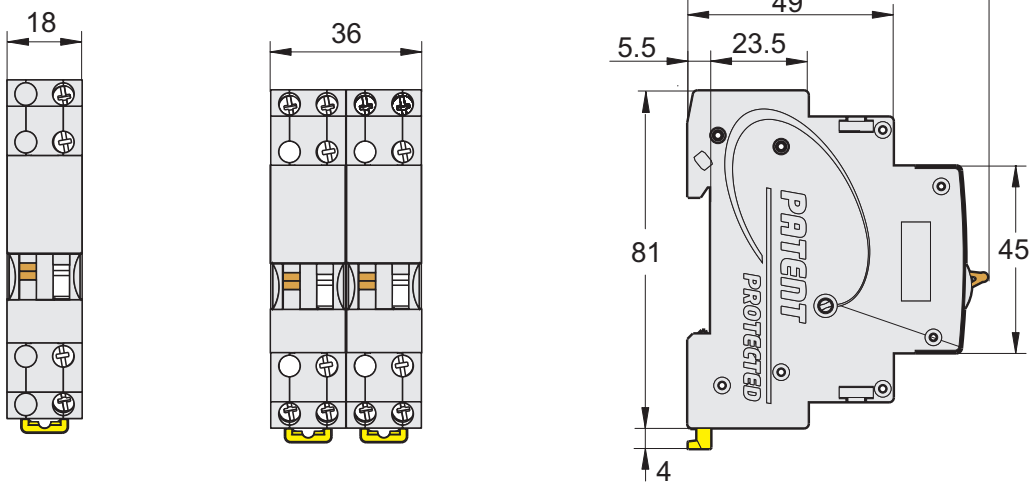
Make the impulse relay interface to be connected

Make press ensure connection solid

8 Packing information

Type	BOX QTY	CTN QTY	G.W. (kg)	N.W. (kg)	CARTON SIZE (mm)
HIR-16/10	12	120	13	11.4	440×300×200
HIR-16/20	12	120	13.96	12.36	440×300×200
HIR-16/11	12	120	13.84	12.24	440×300×200
HIR-16/1C	12	120	13.36	11.76	440×300×200
HIR-16/30	6	60	13. 66	12. 06	440×300×200
HIR-16/21	6	60	13. 6	12	440×300×200
HIR-16/40	6	60	14.2	12.6	440×300×200
HIR-16/31	6	60	13.9	12.3	440×300×200
HIR-16/22	6	60	13.9	12.3	440×300×200
HIR-16/2C	6	60	13.42	11.82	440×300×200

9 Product dimensions (mm)



Modular contactor and Impulse relay

Choice of rating according to load type

Modular contactors and impulse relays do not use the same technologies. Their rating is determined according to different standards and does not correspond to the rated current of the circuit.
For example, for a given rating, an impulse relay is more efficient than a modular contactor for the control of light fittings with a strong inrush current, or with a low power factor (non-compensated inductive circuit)

Relay rating

- The table below shows the maximum number of light fittings for each relay, according to the type, power and configuration of a given lamp. As an indication, the total acceptable power is also mentioned.
- These values are given for a 230 V circuit with 2 active conductors (single-phase phase/neutral or two-phase phase/phase). For 110 V circuits, divide the values in the table by 2.
- To obtain the equivalent values for the entire 230 V three-phase circuit, multiply the number of lams and the maximum power output:
  - by (1.73) for circuits with 230 V between phases without neutral;
  - by for circuits with 230 V between phase and neutral or 400 V between phases.

Note: The power ratings of the lamps most commonly used are shown in bold.
For powers not mentioned, use a proportional rule with the nearest values.

Choice table

Products			HIR Impulse relays		HCH8 Modular contactors					
Type of lamp	Unit power and capacitance of power factor correction capacitor		Maximum number of light fittings for a single-phase circuit and maximum power output per circuit							
			16 A		16 A		25 A		40 A	
Basic incandescent lamps, LV halogen lamps, replacement mercury vapour lamps (without ballast)										
	40 W		40	1500 W	38	1550 W	57	2300 W	115	4600 W
	60 W		25	to	30	to	45	to	85	to
	75 W		20	1600 W	25	2000 W	38	2850 W	70	5250 W
	100 W		16		19		28		50	
	150 W		10		12		18		35	
	200 W		8		10		14		26	
	300 W		5	1500 W	7	2100 W	10	3000 W	18	5500 W
	500 W		3		4				10	to
	1000 W		1		2				6	6000 W
	1500 W		1		1				4	
ELV 12 or 24 V halogen lamps										
With ferromagnetic transformer	20 W		70	1350 W	15	300 W	23	450 W	42	850 W
	50 W		28	to	10	to	15	to	27	to
	75 W		19	1450 W	8	600 W	12	900 W	23	1950 W
	100 W		14		6				18	
With electronic transformer	20 W		60	1200 W	62	1250 W	90	1850 W	182	3650 W
	50 W		25	to	25	to	39	to	76	to
	75 W		18	1400 W	20	1600 W	28	2250 W	53	4200 W
	100 W		14		16		22		42	
Fluorescent tubes with starter and ferromagnetic ballast										
1 tube without compensation[1]	15W		83	1250 W	22	330 W	30	450 W	70	1050 W
	18 W		70	to	22	to	30	to	70	to
	20 W		62	1300 W	22	850 W	30	1200 W	70	2400 W
	36 W		35		20		28		60	
	40 W		31		20		28		60	
	58 W		21		13		17		35	
	65 W		20		13		17		35	
	80 W		16		10		15		30	
	115 W		11		7		10		20	
1 tube without with parallel compensation[2]	15 W	5 µF	60	900 W	15	200 W	20	300 W	40	600 W
	18 W	5 µF	50		15	to	20	to	40	to
	20 W	5 µF	45		15	800 W	20	1200 W	40	2400 W
	36 W	5 µF	25		15		20		40	
	40 W	5 µF	22		15		20		40	
	58 W	7 µF	16		10		15		30	
	65 W	7 µF	13		10		15		30	
	80 W	7 µF	11		10		15		30	
	115 W	16µF	7		5		7		14	
2 or 4 tube with seriesl compensation	2 x 18 W		56	2000 W	30	1100 W	46	1650 W	80	2900 W
	4 x 18 W		28		16	to	24	to	44	to
	2 x 36 W		28		16	1500 W	24	2400 W	44	3800 W
	2 x 58 W		17		10		16		27	
	2 x 65 W		15		10		16		27	
	2 x 80 W		12				13		22	
	2 x 115 W		8				10		16	

Choice table (cont)

Products			HIR Impulse relays				HCH8 Modular contactors							
Type of lamp	Unit power and capacitance of power factor correction capacito		Maximum number of light fittings for a single-phase circuit and maximum power output per circuit											
			16 A				16 A		25 A		40 A	
Fluorescent tubes with electronic ballast												
1 or 2 tubes	18 W		80	1450 W			74	1300 W	111	2000 W	222	4000 W
	36 W		40	to			38	to	58	to	117	to
	58 W		26	1550 W			25	1400 W	37	2200 W	74	4400 W
	2 x 18 W		40				36		55		111	
	2 x 36 W		20				20		30		60	
	2 x 58 W		13				12		19		38	
Compact fluorescent lamps												
With external electronic ballast	5 W		240	1200 W			210	1050 W	330	1650 W	670	3350 W
	7 W		171	to			150	to	222	to	478	to
	9 W		138	1450 W			122	1300 W	194	2000 W	383	4000 W
	11 W		118				104		163		327	
	18 W		77				66		105		216	
	26 W		55				50		76		153	
With integral electronic ballast (replacement for incandescent lamps)	5 W		170	850 W			160	800 W	230	1650 W	470	2350 W
	7 W		121	to			114	to	164	to	335	to
	9 W		100	1050 W			94	900 W	133	1300 W	266	2600 W
	11 W		86				78		109		222	
	18 W		55				48		69		138	
	26 W		40				34		50		100	
High-pressure mercury vapour lamps with ferromagnetic ballast without ignito Replacement high-pressure sodium vapour lamps with ferromagnetic ballast with integral ignitor (3))												
Without compensation[1]	50W		Not tested, infrequent use				15	750 W	20	1000 W	34	1700 W
	80W						10	to	15	to	27	to
	125/110 W[3]						8	1000 W	10	1600 W	20	2800 W
	250/220 W[3]						4		6		10	
	400/ 350 W[3]						2		4		6	
	700 W						1		2		4	
With parallel compensation[2]	50W	7 µ F					10	500 W	15	750 W	28	1400 W
	80W	8 µ F					9	to	13	to	25	to
	125/110 W[3]	10 µ F					9	1400 W	10	1600 W	20	3500 W
	250/220 W[3]	18µ F					4		6		11	
	400/ 350 W[3]	25 µ F					3		4		8	
	700 W	40 µ F					2		2		5	
	1000 W	60 µ F					0		1		3	
Low-pressure sodium vapour lamps with ferromagnetic ballast with external ignitor												
Without compensation[2]	35W		Not tested, infrequent use				5	270 W	9	320 W	14	500 W
	55 W						5	to	9	to	14	to
	90 W						3	360 W	6	720 W	9	1100 W
	135 W						2		4		6	
	180 W						2		4		6	
With parallel compensation[2]	35W	20 µF	38	1350 W	102	3600 W	3	100 W	5	175 W	10	350 W
	55 W	20 µF	24		63		3	to	5	to	10	to
	90 W	26 µF	15		40		2	180 W	4	360 W	8	720 W
	135 W	40 µF	10		26		1		2		5	
	180 W	45 µF	7		18		1		2			

Modular contactor and Impulse relay

Choice of rating according to load type

Products			HIR Impulse relays	HCH8 Modular contactors					
Type of lamp	Unit power and capacitance of power factor correction capacitor		Maximum number of light fittings for a single-phase circuit and maximum power output per circuit						
			16 A	16 A		25 A		40 A	
High-pressure sodium vapour lamps Metal-iodide lamps									
With ferromagnetic ballast with external ignitor,without compensation(1)	35 W		Not tested, infrequent use	16	600 W	24	850 W	42	1450 W
	70 W			8		12	to	20	to
	150 W			4		7	1200 W	13	2000 W
	250 W			2		4		8	
	400 W			1		3		5	
	1000 W			0		1		2	
With ferromagnetic ballast with external ignitor and parallel compensation(2)	35 W	6 µF	34	1200 W	12	450 W	18	650 W	31	1100 W
	70 W	12 µF	17	to	6	to	9	to	16	to
	150 W	20 µF	8	1350 W	4	1000 W	6	2000 W	10	4000 W
	250 W	32 µF	5		3		4		7	
	400 W	45 µF	3		2		3		5	
	1000 W	60 µF	1		1		2		3	
	2000 W	85 µF	0		0		1		2	
With electronic ballast	35 W		38	1350 W	24	850 W	38	1350 W	68	2400 W
	70 W		29	to	18	to	29	to	51	to
	150 W		14	2200 W	9	1350 W	14	2200 W	26	4000 W

(1)Circuits with non-compensated ferromagnetic ballasts consume twice as much current for a given lamp power output. This explains the small number of lamps in this configuration.

(2)The total capacitance of the power factor correction capacitors in parallel in a circuit limits the number of lamps that can be controlled by a contactor. The total downstream capacitance of a modular contactor of rating 16, 25, 40 or 63 A should not exceed 75, 100, 200 or 300 µF respectively. Allow for these limits to calculate the maximum acceptable number of lamps if the capacitance values are different from those in the table.

(3)High-pressure mercury vapour lamps without ignitor, of power 125, 250 and 400 W, are gradually being replaced by high-pressure sodium vapour lamps with integral ignitor, and respective power of 110, 220 and 350 W.

Heating application

- Impulse relay rating to be chosen according to the power to be controlled.

230 V heating		
Type	Maximum power for a given rating HIR impulse relays	
Single-phase circuit	16 A	32 A
Heating (AC1)	3.6 kW	7.2 kW

- Contactor rating to be chosen according to the power to be controlled and the number of operations a day

230 V heating		
Type of heating application	Maximum power for a given rating HCH8 Modular contactor	
	25 A	40 A
25	5.4 kW	8.6 kW
50	5.4 kW	8.6 kW
75	4.6 kW	7.4 kW
100	4 kW	6 kW
250	2.5 kW	3.8 kW
500	1.7 kW	2.7 kW
400 V heating		
25	16 kW	26 kW
50	16 kW	26 kW
75	14 kW	22 kW
100	11kW	17 kW
250	5 kW	8 kW
500	3.5 kW	6 kW

Small motor application

- Contactor rating to be chosen according to the power to be controlled

Asynchronous single-phase motor with capacitor		
Small motor application type	Maximum power for a given rating HCH8 Modular contactor	
Voltage	25 A	40 A
230 V	1.4	2.5
Asynchronous three-phase motor		
400 V	4	7.5
Universal motor		
230 V	0.9	1.4

HCH8 Modular contactor loading type characteristics

- IEC61095 Standard suitable for residential with similar use . Its Different with IEC60947-4 (Its for industrial use). It is also has specials require for staff and equipments safety.

Application	Industry IEC 60947-4	Residential IEC 61095
Motor	AC3	AC7b
Heating	AC1	AC7a
Lighting	AC5a and b	AC5a and b