Impulse Relays

Leading Manufacturer Protects Solar Power Safety

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Company Introduction

ONCCY started the switch and circuit breaker manufacturing in 1988. With over 30 years of experience and high investment in R&D, ONCCY is now a specialist in the intelligent electric component sector.

ONCCY is an ISO9001:2015 and ISO14001 accredited company. Located in Wenzhou, our production base owned the UL-approved laboratory, more than 30,000 square meters plant and multiple automated production lines. At present, it has more than 500 employees and approximately 30% are R&D technicians. Thanks to its strong ability of independent innovation, all ONCCY products are developed and manufactured with the focus on reliability, safety and convenience according to the latest international standards.

Our main products are including DC and AC circuit breaker (MCB), DC and AC isolation switch, DC molded case circuit breaker (MCCB), DC fuse, DC lighting surge protector (SPD) and so on. Dealing with the needs of the market, ONCCY can not only provide customized products but also integrates leading products into the overall solution, providing customers with a one-stop integrated service experience.

Innovation is the only way to the future. As one of the earliest electrical switch companies to obtain UL certification in China, ONCCY has also obtained CE, IEC, TUV, CCC, SAA and other authoritative certifications and all products have passed the strict testing requirements of GB and IEC standards. It is widely used in more than 40 countries and regions such as Europe, North America, and the Asia Pacific, serving nearly a thousand key engineering projects.

So far, we have provided intelligent electrical solutions for hundreds of domestic and foreign customers such as CAT, LG, BYD, Panasonic, Honeywell, Huawei etc., and have been highly recognized by the professional market.

Fully-Functional Laboratory

Our laboratory has a complete set of testing equipment, which can conduct effective and reliable tests on materials and products, and has been approved by UL.




Our Certificates

ONCCY ensures that its products have obtained important certifications and recognitions from international authoritative organizations in order to have excellent effects in various scenarios.


ENVIRONMENTAL MANAGEMENT SYSTEM CERTIFICATION
Certificate
ONCCY Electrical Co.,LTD


CERTIFICATE
of Conformity
Low Voltage Directive 2014/35/EU


CERTIFICATE OF APPROVAL


CB TEST CERTIFICATE

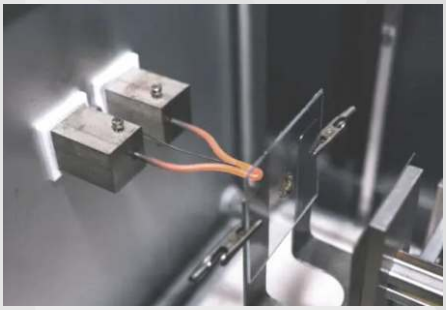

Certificate of Suitability
"Addendum"

Strict Quality Tests


Electrical Cycle Test


UV Aging Test


High Low-Temperature Humid-Heat Test


Glow-Wire Test


High-Temperature Test


IPX5-6 Strong Water Spray Test

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EIR 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

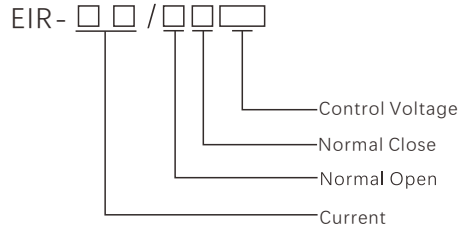
Applicable scope

EIR 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

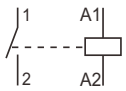
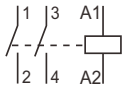
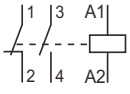
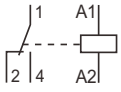
Type and Meaning



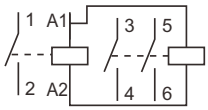
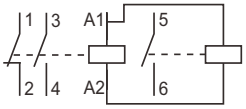
(eg.EIR-16/10 DC12V，It is16A，1NO，12V DC current coil voltage)

Product specification

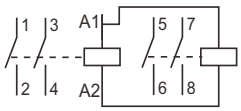
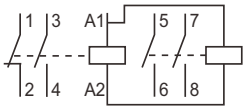
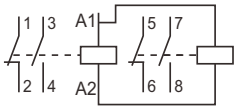
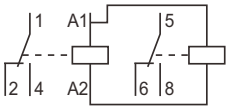
AC 2P,1modules

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

AC 3P,2modules

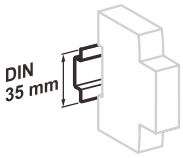
Contactor Model	Rated Current	Control Voltage (V AC)(50Hz)	Circuit Diagram
EIR-16/30	16A	AC24V/DC12V AC48V/DC24V	
EIR-16/21	16A	AC110V/DC48V AC230V/DC110V	

AC 4P,2modules

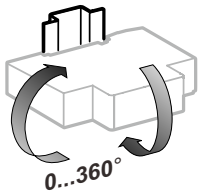
Contactor Model	Rated Current	Control Voltage (V)(50Hz)	Circuit Diagram
EIR-16/40	16A	AC24V/DC12V AC48V/DC24V AC110V/DC48V AC230V/DC110V	
EIR-16/31	16A		
EIR-16/22	16A		
EIR-16/2C	16A		

Main parameter and technical performance

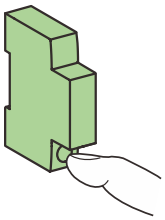
Control circuit		
Dissipated power (during the impulse)		19 VA
Illuminated PB control		Max. current 3 mA (if > use an ATLz)
Operating threshold		Min. 85 % of Un
Duration of the control order		50 ms to 1 s (200 ms recommended)
Response time		50ms
Power circuit		
Voltage rating(Ue)	1P,2P	250V AC
Frequenc		50/60Hz
Maximum number of operations per minute		5
Maximum number of switching operation a day		100
Endurance		200,000 cycles（AC21）
		100,000 cycles（AC22）
Overvoltage category		IV
Insulation voltage(Ui)		440 V 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℃



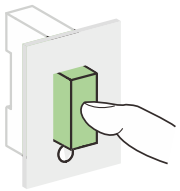
Clip on DIN rail 35 mm.



Indifferent position of installation.

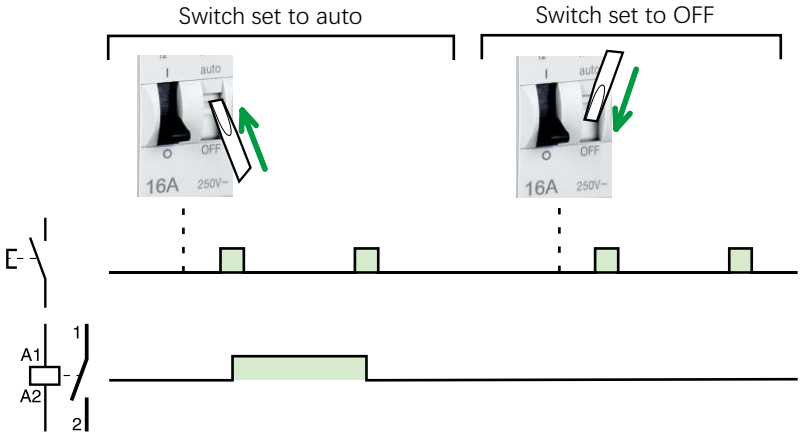


IP20

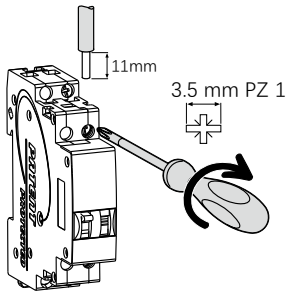


IP40

Operation(Impluse relay)



Impulse relay connection and auxiliary



Type	Rating	Circuit	Tightening torque	Copper cables	
				Rigid or ferrule	Flexible or ferrule
					
EIR	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

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

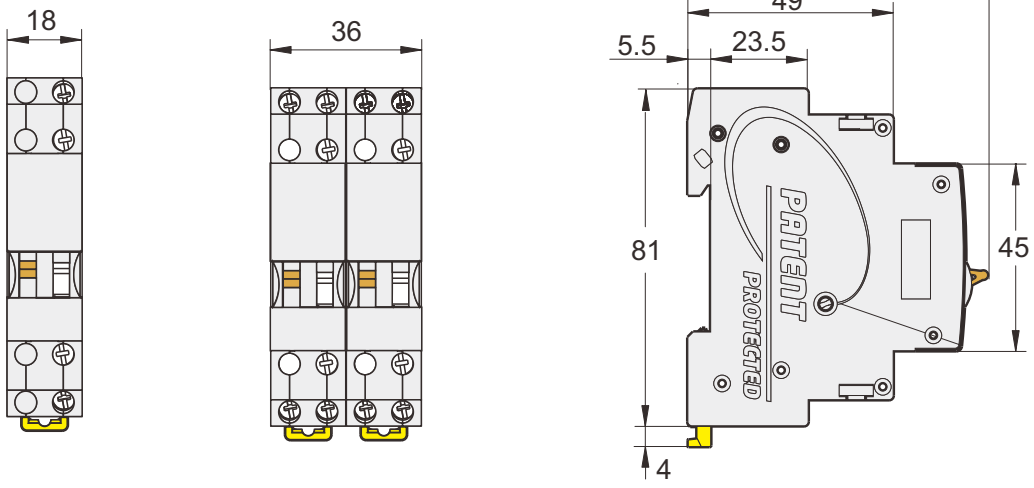
Make the impulse relay interface to be connected

Make press ensure connection solid

Packing information

Type	BOX QTY	CTN QTY	G.W. (kg)	N.W. (kg)	CARTON SIZE (mm)
EIR-16/10	12	120	13	11.4	440×300×200
EIR-16/20	12	120	13.96	12.36	440×300×200
EIR-16/11	12	120	13.84	12.24	440×300×200
EIR-16/1C	12	120	13.36	11.76	440×300×200
EIR-16/30	6	60	13.66	12.06	440×300×200
EIR-16/21	6	60	13.6	12	440×300×200
EIR-16/40	6	60	14.2	12.6	440×300×200
EIR-16/31	6	60	13.9	12.3	440×300×200
EIR-16/22	6	60	13.9	12.3	440×300×200
EIR-16/2C	6	60	13.42	11.82	440×300×200

Product dimensions (mm)



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			EIR Impulse relays	
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	
Basic incandescent lamps, LV halogen lamps, replacement mercury vapour lamps (without ballast)				
	40 W		40	1500 W
	60 W		25	to
	75 W		20	1600 W
	100 W		16	
	150 W		10	
	200 W		8	
	300 W		5	1500 W
	500 W		3	
	1000 W		1	
	1500 W		1	
ELV 12 or 24 V halogen lamps				
With ferromagnetic transformer	20 W		70	1350 W
	50 W		28	to
	75 W		19	1450 W
	100 W		14	
With electronic transformer	20 W		60	1200 W
	50 W		25	to
	75 W		18	1400 W
	100 W		14	
Fluorescent tubes with starter and ferromagnetic ballast				
1 tube without compensation (1)	15W		83	1250 W
	18 W		70	to
	20 W		62	1300 W
	36 W		35	
	40 W		31	
	58 W		21	
	65 W		20	
	80 W		16	
	115 W		11	
1 tube without with parallel compensation (2)	15 W	5 µF	60	900 W
	18 W	5 µF	50	
	20 W	5 µF	45	
	36 W	5 µF	25	
	40 W	5 µF	22	
	58 W	7 µF	16	
	65 W	7 µF	13	
	80 W	7 µF	11	
	115 W	16 µF	7	
2 or 4tube with seriesl compensation	2 x 18 W		56	2000 W
	4 x 18 W		28	
	2 x 36 W		28	
	2 x 58 W		17	
	2 x 65 W		15	
	2 x 80 W		12	
	2 x 115W		8	

Choice table (cont.)

Products			EIR Impulse relays							
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	
Fluorescent tubes with electronic ballast										
1 or 2 tubes	18 W		80	1450 W to 1550 W						
	36 W		40							
	58 W		26							
	2 x 18 W		40							
	2 x 36 W		20							
	2 x 58 W		13							
Compact fluorescent lamps										
With external electronic ballast	5 W		240	1200 W to 1450 W						
	7 W		171							
	9 W		138							
	11 W		118							
	18 W		77							
	26 W		55							
With integral electronic ballast (replacement for incandescent lamps)	5 W		170	850 W to 1050 W						
	7 W		121							
	9 W		100							
	11 W		86							
	18 W		55							
	26 W		40							
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							
	80W									
	125 / 110 W (3)									
	250 / 220 W (3)									
	400 / 350 W (3)									
	700 W									
With parallel compensation (2)	50W	7 µF								
	80W	8 µF								
	125 / 110 W (3)	10 µF								
	250 / 220 W (3)	18 µF								
	400 / 350 W (3)	25 µF								
	700 W	40 µF								
	1000 W	60 µF								
Low-pressure sodium vapour lamps with ferromagnetic ballast with external ignitor										
Without compensation (1)	35W		Not tested, infrequent use							
	55 W									
	90 W									
	135 W									
	180 W									
With parallel compensation (2)	35W	20 µF	38	1350 W	102	3600 W				
	55 W	20 µF	24		63					
	90 W	26 µF	15		40					
	135 W	40 µF	10		26					
	180 W	45 µF	7		18					

Products			EIR Impulse relays	
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	
High-pressure sodium vapour lamps Metal-iodide lamps				
With ferromagnetic ballast with external ignitor,without compensation (1)	35 W		Not tested, infrequent use	
	70 W			
	150 W			
	250 W			
	400 W			
	1000 W			
With ferromagnetic ballast with external ignitor and parallel compensation (2)	35 W	6 µF	34	1200 W
	70 W	12 µF	17	to
	150 W	20 µF	8	1350 W
	250 W	32 µF	5	
	400 W	45 µF	3	
	1000 W	60 µF	1	
	2000 W	85 µF	0	
With electronic ballast	35 W		38	1350 W
	70 W		29	to
	150 W		14	2200 W
LED lamps				
With driver	10 W		90	1000 W
	30 W		45	to
	50 W		36	1800 W
	75 W		23	
	150 W		12	
	200 W		9	

(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 300µF 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 EIR impulse relays	
Single-phase circuit	16 A	32 A
Heating (AC1)	3.6 kW	7.2 kW

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