

Relay Release

March 2003



What is a relay's function?

Basic

A relay detects a change in the electrical signal to the coil. Then it transforms the signal into a mechanical force that operates the contacts. These contacts are used to control a circuit (load circuit).

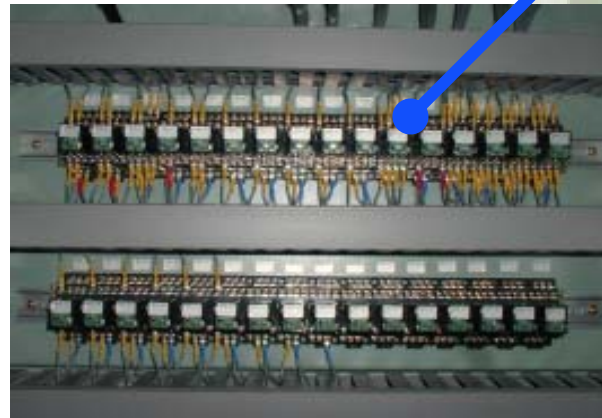
Relays can be used to do any of the following functions:

- Amplification
- Signal Transfer
- Signal Conversion
- Noise Protection
- Calculation
- Detection, alarm
- Etc.

Who needs a relay?

Control panel builders for

- Machine tools
- Elevator panels
- Conveyor systems
- Test equipment
- Packaging equipment
- Food and beverage manufacturing
- Automation



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Features

- **Amp**
 - 3 amp version (4PDT)
 - 5 amp version (DPDT)
 - 10 amp version (4PDT or DPDT)
- **Global range of voltages (14 voltage ratings)**
- **Options**
 - Internal surge protection diode option
 - Red LED operation indicator option (coil energized)
- **Holding clips included with **all** sockets.**
The competition makes you pay for them.
- **Factory ISO 9001**

Features

- **Termination Styles**
 - Solder/plug-in termination
 - PCB-type termination

- **Three socket styles:**
 - DIN-rail
 - PCB
 - Solder

- **Approvals**
 - UL recognized
 - CE certified
 - CSA certified

Benefits

- **Product a success in Asia Pacific**
- **High quality**
- **Reliable**
- **Can meet a wide variety of common applications**
- **Holding clips do not have to be ordered and/or stocked separately**
- **Interchangeable with major competitive brands**
- **Competitively priced (especially in lower quantities)**

What kind of a relay is the SZR ?

Relay

Contact Relay

Electromagnetic Relay

Reed Relay

Special Relay

Non-Contact Relay

PhotoMOS Relay

SSR

Special Relay

Mounting type

Printed Circuit Board
Plug-in/Solder
Bracket Fixing(Flange)

Application Purpose

General Purpose
Special Purpose

Operation mode

Return
Latch

Rated Load

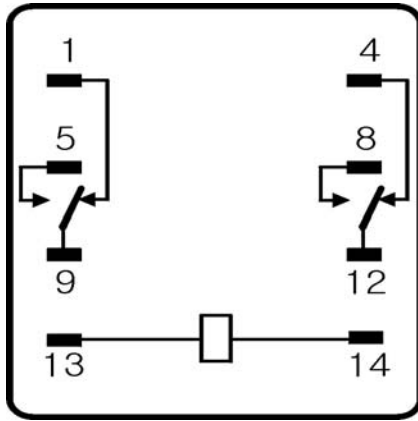
Low Power
Power Relay
High Power

Mechanical structure

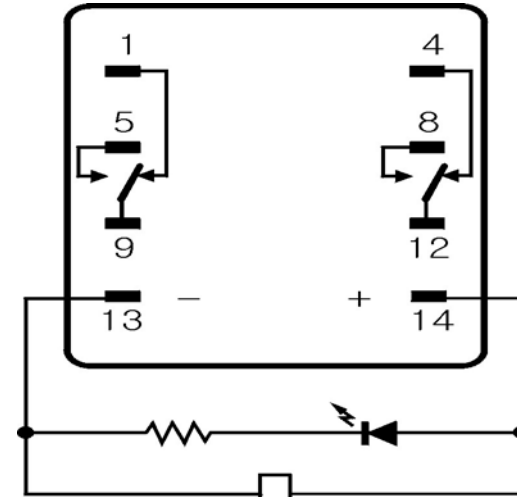
Hinge
Plunger

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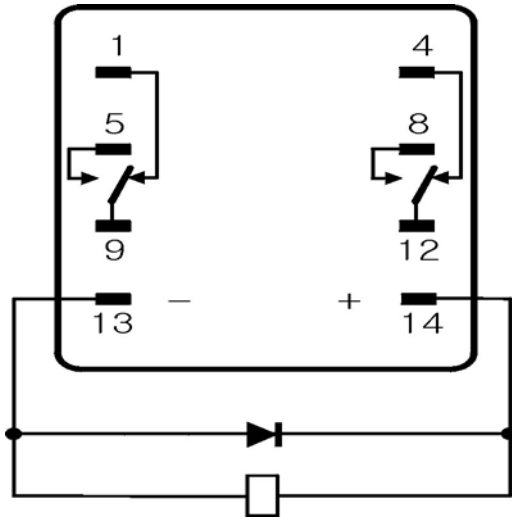
What options do we have ?



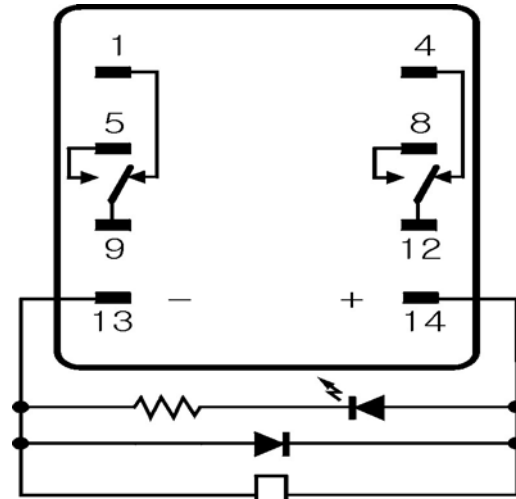
Standard



N type(LED indicator)



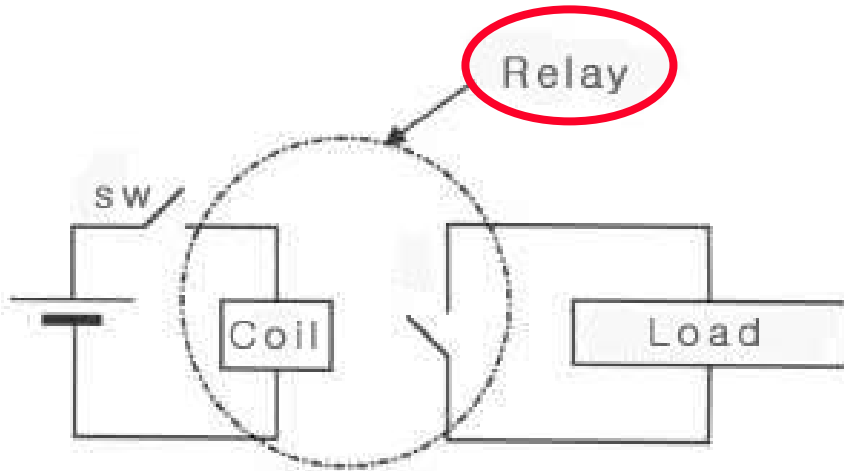
D type(Diode Surge Suppression)



X type(LED + Diode)

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How it works



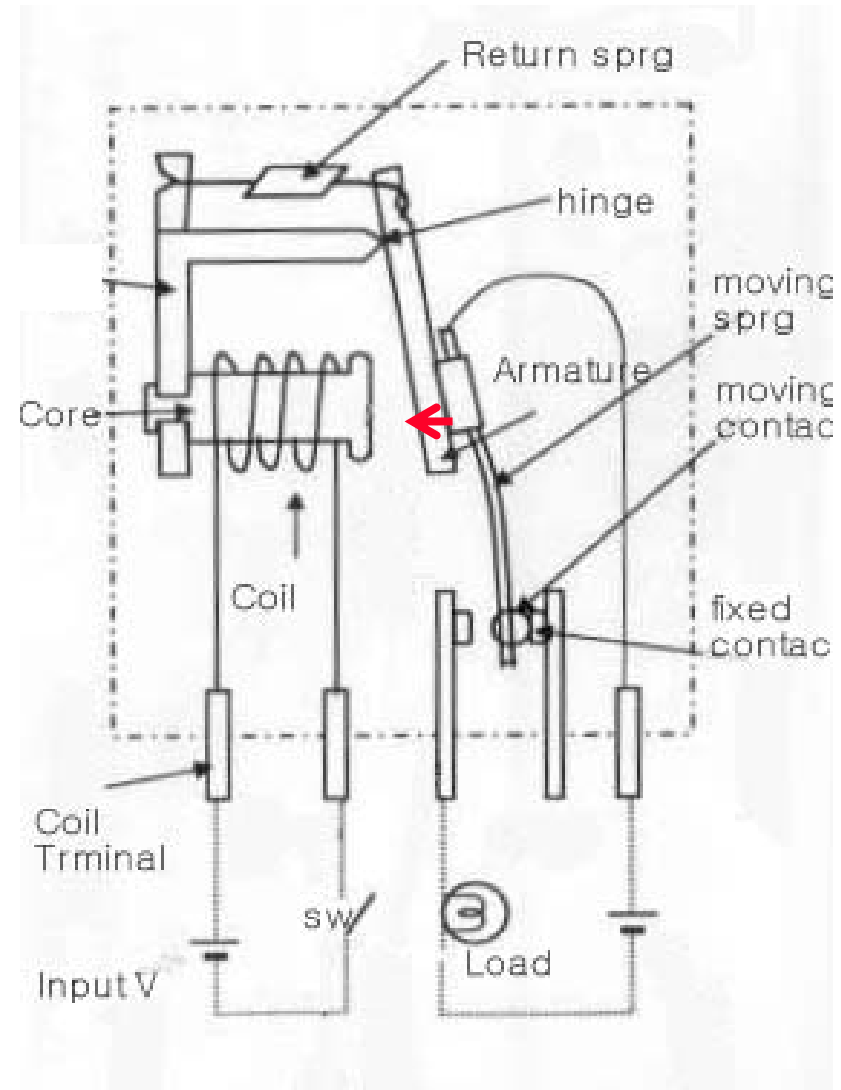
When the switch in the circuit closes, the coil is energized.

Magnetic flux from the coil magnetizes the core.

The armature is pulled to the core by the magnetic force.

The moving contact is pulled to the fixed contact which completes the circuit.

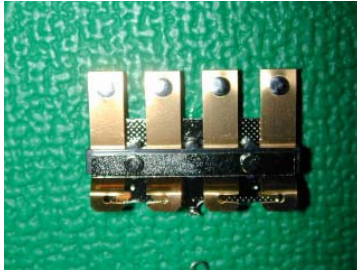
When the circuit switch opens the armature is returned to its original state by the force of return spring.



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Internal structure

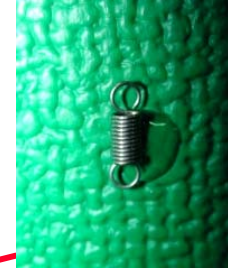
Moving Part Assembly



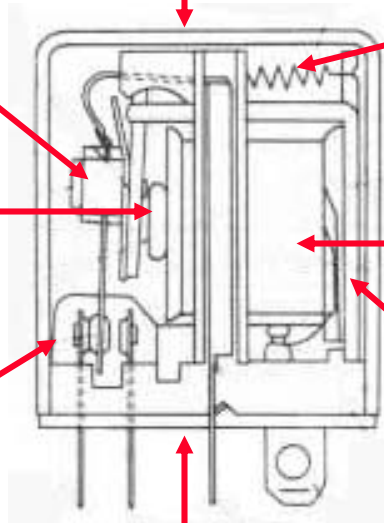
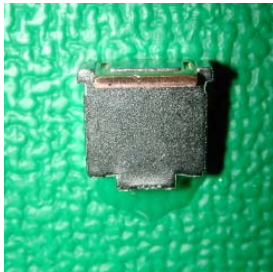
Ice Cube



Return Spring



Core



Coil / Bobbin



Arc Barrier



Base Part Assembly



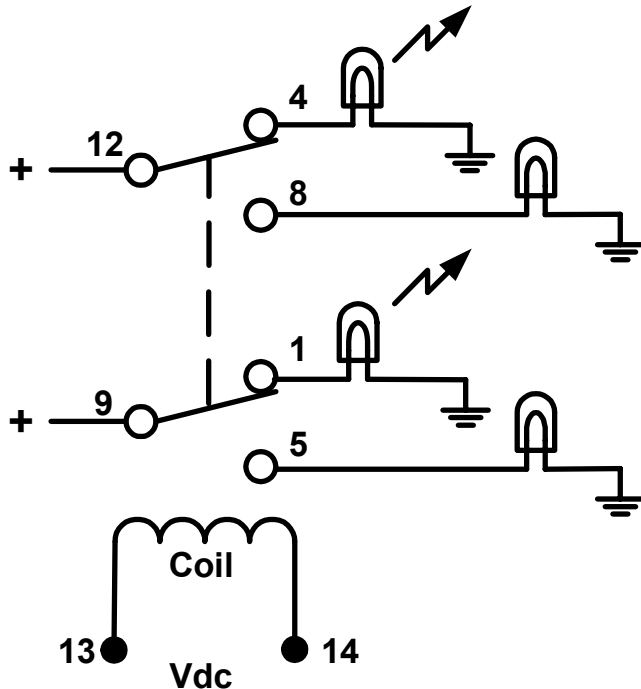
Yoke

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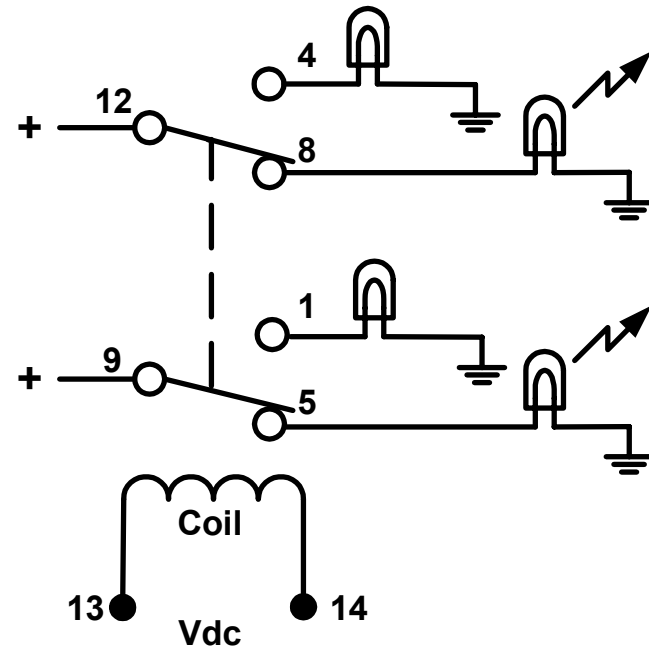
How it works

Example DPDT Circuit Diagram

Double Pole Double Throw Relay
Coil Deenergized



Double Pole Double Throw Relay
Coil Energized



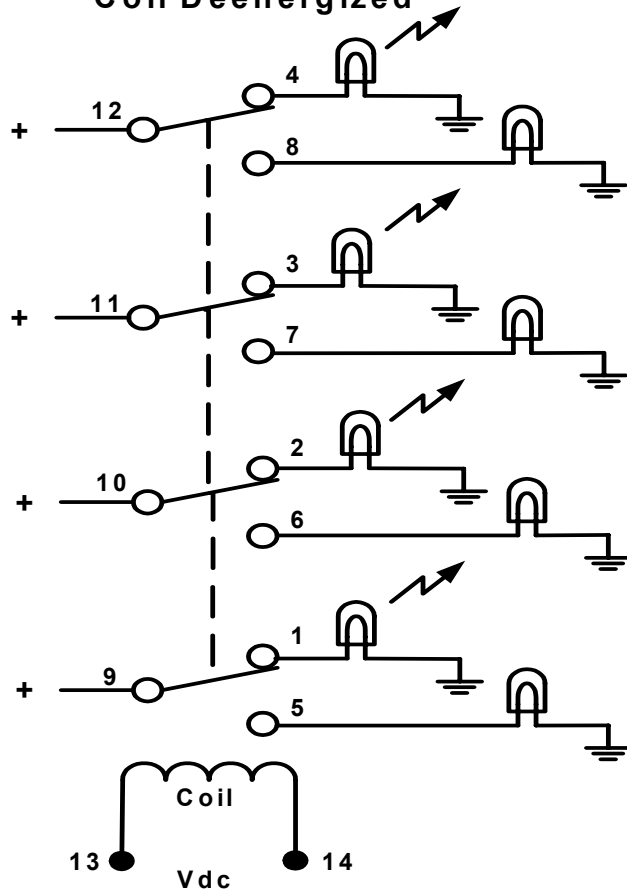
Drawings based on MY Series

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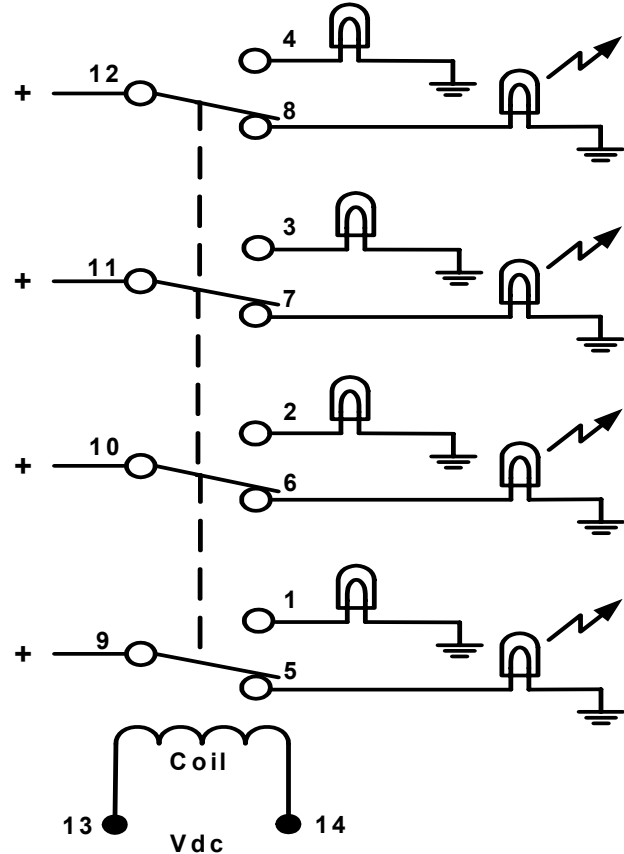
How it works

Example 4PDT Circuit Diagram

Four Pole Double Throw Relay
Coil Deenergized



Four Pole Double Throw Relay
Coil Energized



Drawings based on MY Series

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Current Customers

Honeywell has supplied the switches used in controlling machine function for over 50 years.



Relays are almost always an integral part of those machine controls.

With the addition of relays to Honeywell's product portfolio we are now able to offer a more complete control solution.

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Competitive Cross Reference

SZR-LY

Honeywell	Omron	FINDER	NAIS	IDEC	P&B	A.Zettler
SZR-LY2-1-AC110-120V	LY2-AC110/120	56.32.8.120.0000	HL2-H-AC115V	RH2B-U-AC120V	K10P-11A15-120	AZ165-2CT-120A
SZR-LY2-1-AC220V	LY2-AC220	56.32.8.220.0000	HL2-H-AC240V	RH2B-U-AC220V	K10P-11A15-240	AZ165-2CT-220A
SZR-LY2-1-DC12V	LY2-DC12	56.32.9.012.0000	HL2-H-DC12V	RH2B-U-DC12V	K10P-11D15-12	AZ165-2CT-12D
SZR-LY2-1-DC24V	LY2-DC24	56.32.9.024.0000	HL2-H-DC24V	RH2B-U-DC24V	K10P-11D15-24	AZ165-2CT-24D
SZR-LY2-1P-AC110-120V	LY2-0-AC110/120	56.42.8.120.0000	HL2-HP-AC115V	RH2V2-U-AC120V	K10P-11A55-120	AZ164-2CT-120A
SZR-LY2-1P-DC24V	LY2-0-DC24	56.42.9.024.0000	HL2-HP-DC24V	RH2V2-U-DC24V	K10P-11D55-24	AZ164-2CT-24D
SZR-LY2-D1-DC24V	LY2-D-DC24	NA	NA	RH2B-D-DC24V	NA	NA
SZR-LY2-N1-AC110-120V	LY2N-AC110/120	56.32.8.120.0030	HL2-L-AC115V	RH2B-UL-AC120V	NA	AZ165-2CT-120A1
SZR-LY2-N1-AC220V	LY2N-AC220	56.32.8.220.0030	HL2-L-AC240V	RH2B-UL-AC220V	NA	AZ165-2CT-220A1
SZR-LY2-N1-DC12V	LY2N-DC12	56.32.9.012.0030	HL2-L-DC12V	RH2B-UL-DC12V	NA	AZ165-2CT-12D1
SZR-LY2-N1-DC24V	LY2N-DC24	56.32.9.024.0030	HL2-L-DC24V	RH2B-UL-DC24V	NA	AZ165-2CT-24D1
SZR-LY2-X1-DC24V	LY2N-D2-DC24	56.32.9.024.0060	NA	RH2B-LD-DC24V	NA	NA
SZR-LY4-1-AC110-120V	LY4-AC110/120	56.34.8.120.0000	NA	RH4B-U-AC120V	NA	NA
SZR-LY4-1-AC220V	LY4-AC220	56.34.8.220.0000	NA	RH4B-U-AC220V	NA	NA
SZR-LY4-1-DC12V	LY4-DC12	56.34.9.012.0000	NA	RH4B-U-DC12V	NA	NA
SZR-LY4-1-DC24V	LY4-DC24	56.34.9.024.0000	NA	RH4B-U-DC24V	NA	NA
SZR-LY4-1P-AC110-120V	LY4-0-AC110/120	56.44.8.120.0000	NA	RH4V2-U-AC120V	NA	NA
SZR-LY4-1P-DC24V	LY4-0-DC24	56.44.9.024.0000	NA	RH4V2-U-DC24V	NA	NA
SZR-LY4-D1-DC24V	LY4-D-DC24	NA	NA	RH4B-D-DC24V	NA	NA
SZR-LY4-N1-AC110-120V	LY4N-AC110/120	56.34.8.120.0030	NA	RH4B-UL-AC120V	NA	NA
SZR-LY4-N1-AC220V	LY4N-220	56.34.8.220.0030	NA	RH4B-UL-AC220V	NA	NA
SZR-LY4-N1-DC12V	LY4N-DC12	56.34.9.012.0030	NA	RH4B-UL-DC12V	NA	NA
SZR-LY4-N1-DC24V	LY4N-DC24	56.34.9.024.0030	NA	RH4B-UL-DC24V	NA	NA
SZR-LY4-X1-DC24V	LY4N-D2-DC24	56.34.9.024.0060	NA	RH4B-LD-DC24V	NA	NA
SZX-SLB-08	PT08	NA	HL2-SS-K	SH2B-51	27E488	NA
SZX-SLB-08P	PT08-0	96.12.0	HL2-PS-K	SH2B-62	27E489	NA
SZX-SLB-14	PT14	NA	NA	SH4B-51	NA	NA
SZX-SLB-14P	PT14-0	96.14.0	NA	SH4B-62	NA	NA
SZX-SLF-08N	PTF08A	96.72.0	HL2-SFD-K	SH2B-05	27E895	NA
SZX-SLF-14	PTF14A	96.74.0	NA	SH4B-05	NA	NA

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Competitive Cross Reference

SZR-MY

Honeywell	Omron	FINDER	NAIS	IDEC	P&B	A.Zettler
SZR-MY2-1-AC110-120V	MY2 AC110/120 (S)	55.32.8.120.0000	HC2-H-AC115V	RM2S-U-AC120V	KHAU-11A11-120	AZ165-2C-120A
SZR-MY2-1-AC220V	MY2 AC220 (S)	55.32.8.220.0000	HC2-H-AC240V	RM2S-U-AC220V	KHAU-11A11-240	AZ165-2C-220A
SZR-MY2-1-DC12V	MY2 DC12 (S)	55.32.9.012.0000	HC2-H-DC12V	RM2S-U-DC12V	KHAU-11D11-12	AZ165-2C-12D
SZR-MY2-1-DC24V	MY2 DC24 (S)	55.32.9.024.0000	HC2-H-DC24V	RM2S-U-DC24V	KHAU-11D11-24	AZ165-2C-24D
SZR-MY2-1P-AC110-120V	MY2-02 AC110/120 (S)	55.12.8.120.0000	HC2-HP-AC115V	RM2V-U-AC120V	KHAE-11A11-120	AZ164-2C-120A
SZR-MY2-1P-DC24V	MY2-02 DC24 (S)	55.12.9.024.0000	HC2-HP-DC24V	RM2V-U-DC24V	KHAE-11D11-24	AZ164-2C-24D
SZR-MY2-D1-DC24V	MY2-D DC24 (S)	NA	NA	NA	NA	NA
SZR-MY2-N1-AC110-120V	MY2N AC110/120 (S)	55.32.8.120.0030	HC2-HL-AC115V	RM2S-UL-AC120V	KHAU-11A11N-120	AZ165-2C-120A1
SZR-MY2-N1-AC220V	MY2N AC220 (S)	55.32.8.220.0030	HC2-HL-AC240V	RM2S-UL-AC220V	KHAU-11A11N-240	AZ165-2C-220A1
SZR-MY2-N1-DC12V	MY2N DC12 (S)	55.32.9.012.0030	HC2-HL-DC12V	RM2S-UL-DC12V	KHAU-11D11L-12	AZ165-2C-12D1
SZR-MY2-N1-DC24V	MY2N DC24 (S)	55.32.9.024.0030	HC2-HL-DC24V	RM2S-UL-DC24V	KHAU-11D11L-24	AZ165-2C-24D1
SZR-MY2-X1-DC24V	MY2N-D2 DC24 (S)	55.32.9.024.0060	NA	NA	NA	NA
SZR-MY4-1-AC110-120V	MY4 AC110/120 (S)	55.34.8.120.0000	HC4-H-AC115V	RY4S-U-AC120V	KHAU-17A18-120	AZ165-4C-120A
SZR-MY4-1-AC220V	MY4 AC220 (S)	55.34.8.220.0000	HC4-H-AC240V	RY4S-U-AC220V	KHAU-17A18-240	AZ165-4C-220A
SZR-MY4-1-DC12V	MY4 DC12 (S)	55.34.9.012.0000	HC4-H-DC12V	RY4S-U-DC12V	KHAU-17D18-12	AZ165-4C-12D
SZR-MY4-1-DC24V	MY4 DC24 (S)	55.34.9.024.0000	HC4-H-DC24V	RY4S-U-DC24V	KHAU-17D18-24	AZ165-4C-24D
SZR-MY4-1P-AC110-120V	MY4-02 AC110/120 (S)	55.14.8.120.0000	HC4-HP-AC115V	RY4V-U-AC120V	KHAE-17A18-120	AZ164-4C-120A
SZR-MY4-1P-DC24V	MY4-02 DC24 (S)	55.14.9.024.0000	HC4-HP-DC24V	RY4V-U-DC24V	KHAE-17D18-24	AZ164-4C-24D
SZR-MY4-D1-DC24V	MY4-D DC24 (S)	NA	NA	NA	NA	NA
SZR-MY4-N1-AC110-120V	MY4N AC110/120 (S)	55.34.8.120.0030	HC4-HL-AC115V	RY4S-UL-AC120V	KHAU-17A18N-120	AZ165-4C-120A1
SZR-MY4-N1-AC220V	MY4N AC220 (S)	55.34.8.220.0030	HC4-HL-AC240V	RY4S-UL-AC220V	KHAU-17A18N-240	AZ165-4C-220A1
SZR-MY4-N1-DC12V	MY4N DC12 (S)	55.34.9.012.0030	HC4-HL-DC12V	RY4S-UL-DC12V	KHAU-17D18L-12	AZ165-4C-12D1
SZR-MY4-N1-DC24V	MY4N DC24 (S)	55.34.9.024.0030	HC4-HL-DC24V	RY4S-UL-DC24V	KHAU-17D18L-24	AZ165-4C-24D1
SZR-MY4-X1-DC24V	MY4N-D2 DC24 (S)	55.34.9.024.0060	NA	NA	NA	NA
SZX-SMB-08	PY08	94.22.0	HC2-SS-K	SY2S-51	NA	NA
SZX-SMB-08P	PY08-02	94.12.0	HC2-PS-K	SY2S-62	27E220	NA
SZX-SMB-14	PY14	94.24.0	HC4-SS-K	SY4S-51	27E006	NA
SZX-SMB-14P	PY14-02	94.14.0	HC4-PS-K	SY4S-62	27E023	NA
SZX-SMF-08N	PYF08A	94.72.0	HC2-SFD-K	SY2S-05	NA	NA
SZX-SMF-14N	PYF14A	94.74.0	HC4-SFD-K	SY4S-05	27E894	NA
SZX-SMF-08S	PYF08A	NA	HC2-SFD-S	SY2S-05	NA	NA
SZX-SMF-08SE	PYF08AE	94.72.0	NA	SY2S-05C	NA	NA

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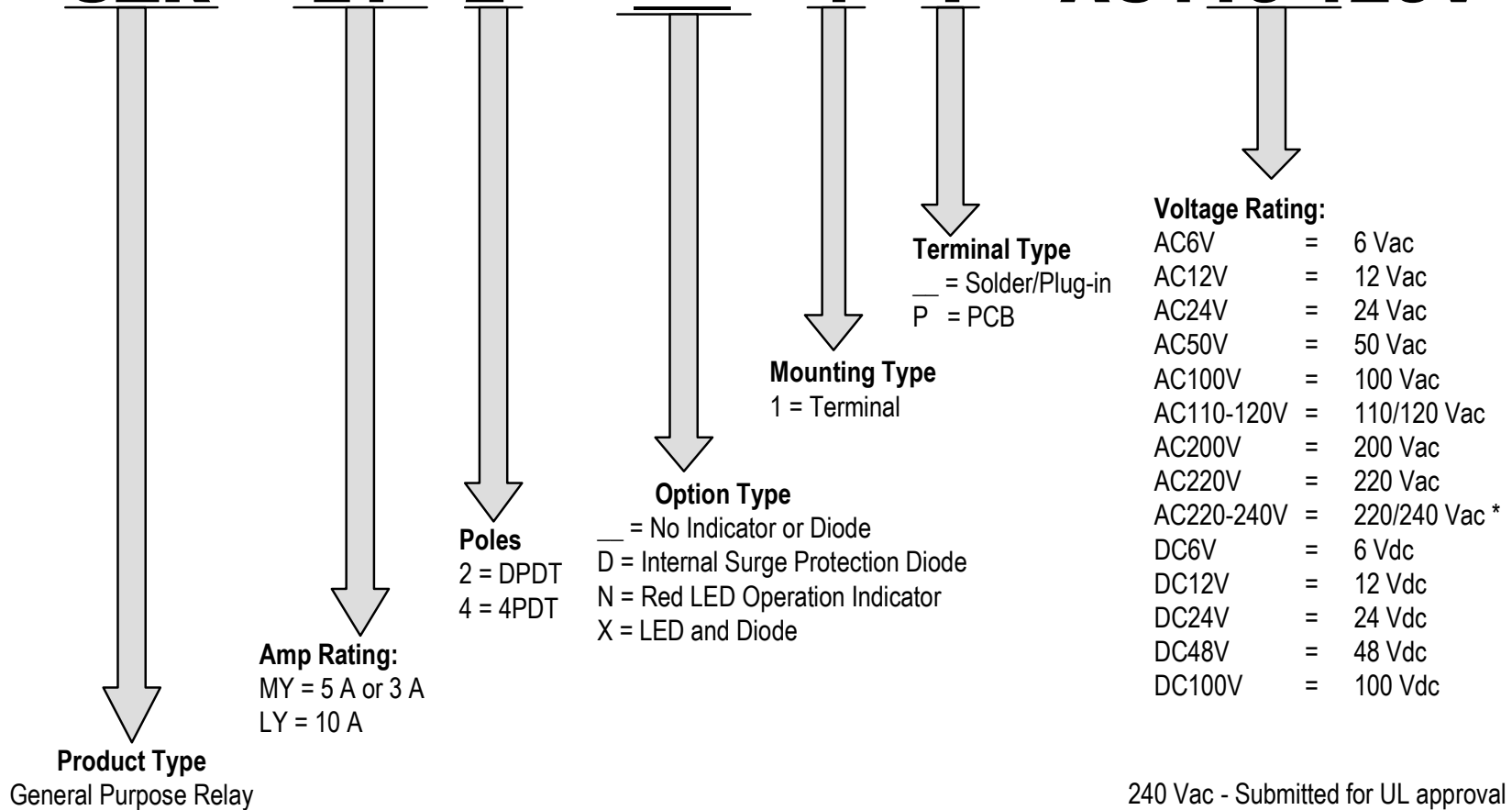
Relay Selection Considerations

Coil	Coil power source DC or AC ? What is pick-up voltage and drop-out voltage ? Operate time and release time ? Coil resistance ?
Contact	What is the contact form and number of poles ? What is the level of contact load ? What switching frequency is needed ? Life expectancy is enough ?
Mounting	Outside dimensions ? Mounting method ? Plug-in or soldering ?
Insulation	Dielectric strength ? Insulation resistance ?
Environment	Ambient temperature and humidity Vibration and Shock ?

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Catalog Listing Matrix

SZR - LY 2 - 1 P - AC110-120V



Warnings

WARNING

MISUSE OF DOCUMENTATION

- The information presented in this product sheet is for reference only. Do not use this document as product installation information.

Failure to comply with these instructions could result in death or serious injury.

WARNING

PERSONAL INJURY

- **DO NOT USE** these products as safety or emergency stop devices, or in any other application where failure of the product could result in personal injury.

Failure to comply with these instructions could result in death or serious injury.