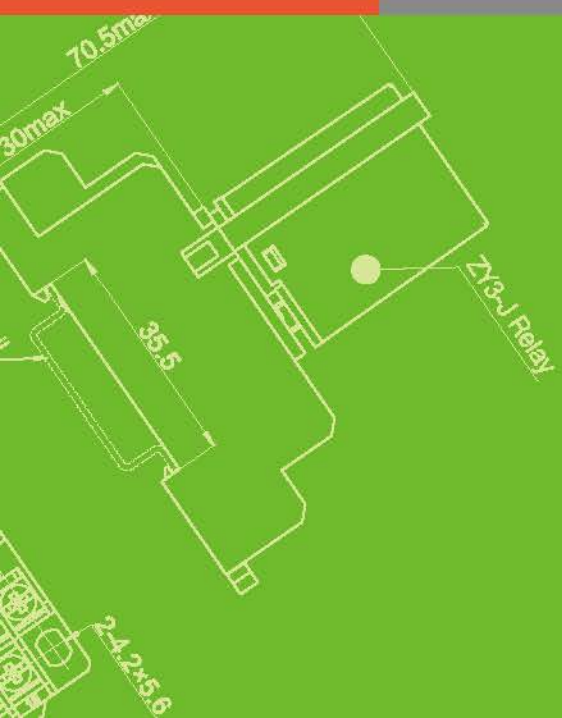


ZY/DY Series Control Relay



APT, established in 1993, has been specialized in the manufacturing of low voltage products such as pushbuttons and indicator and is one of the leading low voltage control device manufacturers in China. Through years of promotion and application, APT Series products have been widely serving dozens of industrial fields in China, including power, machinery, steel, metallurgy, petrochemical, transportation, water treatment, food, packaging, textile, harbor and construction etc. They have been successively chosen and used by the national key projects such as Qinshan Nuclear Power Plant, the Three Gorges Project, the Qinghai-Tibet Railway locomotives, Shenzhou V Spacecraft, Shanghai Pudong International Airport, National Stadium ("Bird's Nest")

In August, 2008, according to the asset purchase agreement between Shanghai APT Co., Ltd. (hereinafter referred to as "APT") and Siemens Electrical Apparatus Ltd. Suzhou (hereinafter referred to as "Siemens"), both parties have completed the business transaction. APT brand and related products will be under the operation of "Siemens" Group. As a new member of Siemens Group, APT will succeed and promote the business operation philosophy of the former "APT", i.e. customer orientation. With the quality management and R&D resources of Siemens, APT will focus on the manufacture of pushbuttons, indicator components and other important low voltage products such as the signal lighting, cam switch, relay, current transformer and limit switch etc. Furthermore, Siemens will develop its international business operation experience to strengthen the management and business development of APT and better serve Chinese and global market demands through its advanced technology.

We will do better!



**ZY/DY Series
Control Relays**



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ZY/DY Series Control Relay	
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ZY/DY Series Control Replay

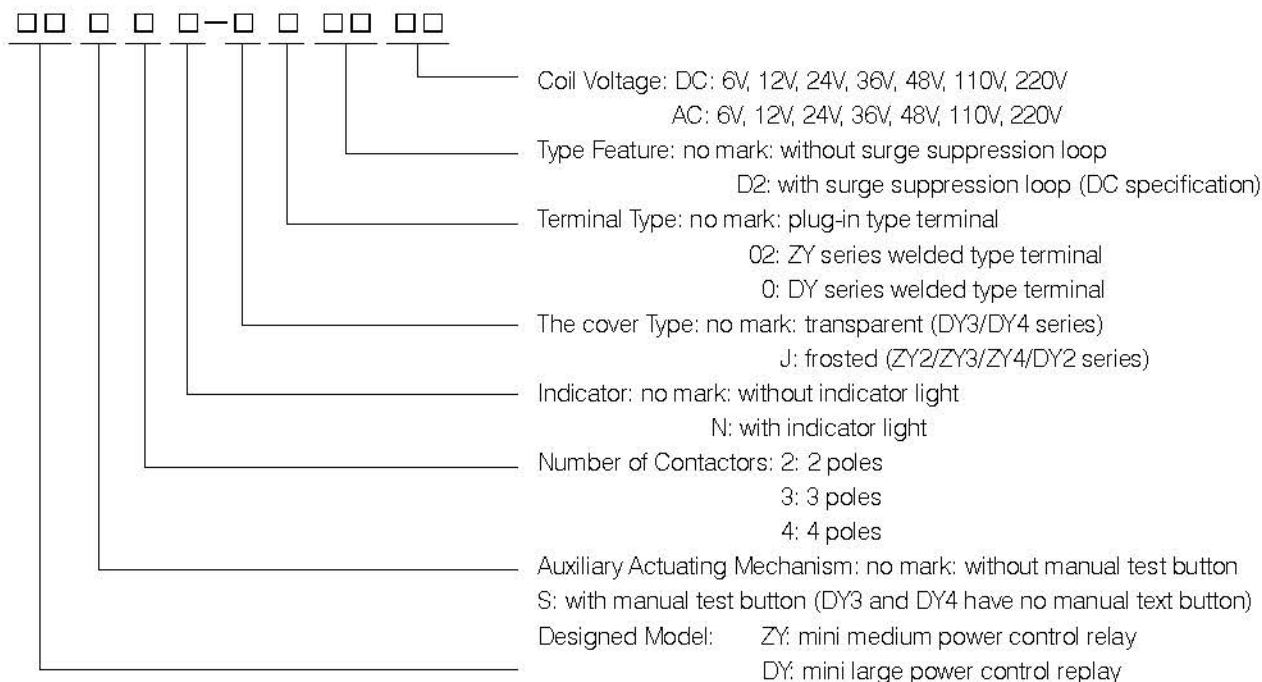
Product Features

- variety type model and it is almost 400 model;
- Apply in many industry and the contact capacity current from low current (10mA) to power current (10A);
- The control voltages of the coil: DC6V-120V, AC12V-240V (50/60Hz);
- Multi installation methods with various sockets for selection;



- LED indicator, green for DC and red for AC;
- It has a large lighting area, which is easy for verifying the lighting status;
- The indicator light and surge suppressor are integrated together.
- Test button function, easy for debugging and maintenance.

Description of Model Number



ZY Series Relay

ZY2-J Series



ZY2-J
(Standard Type)



Applicable Sockets
(SYF08A)
Standard screw terminal type
with the width of 22mm



Applicable Sockets
(SYF08A-E)
Safety type screw terminal
type with the width of 22mm



Applicable Sockets
(SYF08A-F)
Safety type screw terminal
type with trip bar mode and
the width of 24mm



Applicable Sockets
(SKB08-E)
Frame type screw terminal
type with trip bar mode and
the width of 27mm



ZYS2-J
(Manual test Button Type)



Applicable Sockets
(SYF08A1)
Standard screw terminal type
with the width of 22mm



Applicable Sockets
(SYF08A1-E)
Safety type screw terminal
type with the width of 22mm

Category:

Classification	Model.	Coil Voltage
Standard Type	ZY2-J	DC: 6V、12V、24V、36V、48V、110V、220V AC: 6V、12V、24V、36V、48V、110V、220V
Manual test button Type	ZYS2-J	
Welded Terminal Type	ZY2-J02	
Indicator Type	ZY2N-J	
Surge Suppression Loop Type (DC specification)	ZY2-JD2	

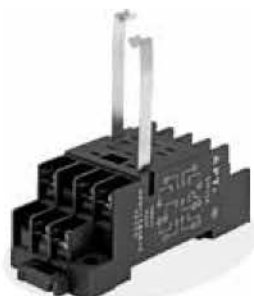
For example: manual test button, 2 poles with indicator and surge suppression loop, and DC12V coil voltage, welded type, the medium power relay as: ZYS2N-J02D2DC12V.

ZY/DY Series Control Replay

ZY3-J Series



ZY3-J
(Standard Type)



Applicable Sockets
(SYF11A)
Standard screw terminal type
with the width of 29mm



Applicable Sockets
(SYF11A-E)
Safety type screw terminal
type with the width of 29mm



ZYS3-J
(Manual test Button Type)



Applicable Sockets
(SYF11A1)
Standard screw terminal type
with the width of 29mm



Applicable Sockets
(SYF11A1-E)
Safety type screw terminal
type with the width of 29mm

Category:

Classification	Model.	Coil Voltage
Standard Type	ZY3-J	DC: 6V, 12V, 24V, 36V, 48V, 110V, 220V AC: 6V, 12V, 24V, 36V, 48V, 110V, 220V
Manual test button Type	ZYS3-J	
Welded Terminal Type	ZY3-J02	
Indicator Light Type	ZY3N-J	
Surge Suppression Loop Type (DC specification)	ZY3-JD2	

For example: manual test button, 3 poles with indicator and surge suppression loop, and DC12V coil voltage, welded type, the medium power relay as: ZYS3N-J02D2DC12V.

ZY4-J Series



ZY4-J
(Standard Type)



Applicable Sockets
(SYF14A)
Standard screw terminal type
with the width of 29mm



Applicable Sockets
(SYF14A-E)
Safety type screw terminal
type with the width of 29mm



Applicable Sockets
(SKB14-E)
Frame type screw terminal type with
trip bar mode and the width of 27mm



ZYS4-J
(Manual test button Type)



Applicable Sockets
(SYF14A1)
Standard screw terminal type
with the width of 29mm



Applicable Sockets
(SYF14A1-E)
Safety type screw terminal
type with the width of 29mm

Category:

Classification	Model.	Coil Voltage
Standard Type	ZY4-J	DC: 6V, 12V, 24V, 36V, 48V, 110V, 220V AC: 6V, 12V, 24V, 36V, 48V, 110V, 220V
Manual test button Type	ZYS4-J	
Welded Terminal Type	ZY4-J02	
Indicator Light Type	ZY4N-J	
Surge Suppression Loop Type (DC specification)	ZY4-JD2	

For example: manual test button, 4 poles with indicator and surge suppression loop, and DC12V coil voltage, welded type, the medium power relay as: ZYS4N-J02D2DC12V.

ZY/DY Series Control Replay

Technical Parameters

(1) Basic Technical Data

Item		ZY2-J/ZYS2-J	ZY3-J/ZYS3-J	ZY4-J/ZYS4-J
Ith		5A		3A
Ui		250V		
Max. Working Voltage of Coil		110%Us		
Action Time		≤20ms		
Release Time		≤30ms		
Contact Changeover & Release Time		≥0.15ms		
Contact Resistance		≤50mΩ		
Max. Working Voltage of Contactor		AC250V, DC250V		
Insulation Resistance		≥100MΩ		
Uimp	Between Breaking Contacts	AC1100V, 50Hz, 1min		
	Between Contact Poles	AC1500V, 50Hz, 1min		
	Between Contact-Coil	AC1500V, 50Hz, 1min		
	Between Contact/Coil- Ground	AC1500V, 50Hz, 1min		
Operation Frequency		≤30 times/minute		
Vibration		10~55Hz, Complex Amplitude 1.0mm, 1min		
Impact		200m/s ² , 11ms		
Electrical endurance		2×10 ⁵ Times		
Mechanical endurance		AC: 2×10 ⁷ Times; DC: 5×10 ⁷ Times		
Ambient Temperature		-5℃ ~+40℃		
Weight		About 38g		

(2) Coil Specifications

Rated Voltage	operate Voltage	Release Voltage	Coil Resistance (Ω)	Coil Power consumption
DC6V	$\leq 4.5V$	$\geq 0.6V$	40	About 0.9W
DC12V	$\leq 9V$	$\geq 1.2V$	160	
DC24V	$\leq 18V$	$\geq 2.4V$	640	
DC36V	$\leq 27V$	$\geq 3.6V$	1450	
DC48V	$\leq 36V$	$\geq 4.8V$	2600	
DC110V	$\leq 82.5V$	$\geq 11V$	11500	
DC220V	$\leq 165V$	$\geq 22V$	46500	
AC6V	$\leq 4.8V$	$\geq 1.8V$	9	About 1.2VA
AC12V	$\leq 9.6V$	$\geq 3.6V$	35	
AC24V	$\leq 19.2V$	$\geq 7.2V$	160	
AC36V	$\leq 28.8V$	$\geq 10.8V$	280	
AC48V	$\leq 38.4V$	$\geq 14.4V$	590	
AC110V	$\leq 88V$	$\geq 33V$	3500	
AC220V	$\leq 176V$	$\geq 66V$	13800	

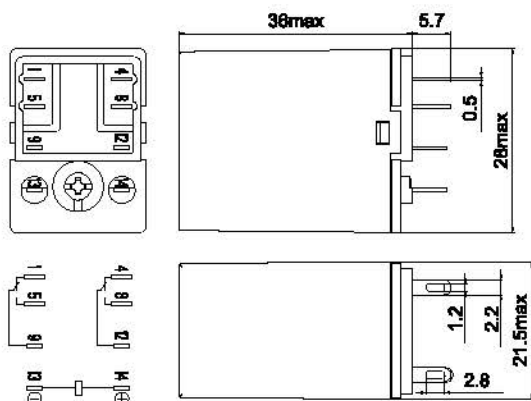
- Notes: 1. The above data are tested at room temperature (25°C).
 2. AC specification is the parameter at 50Hz.
 3. The special order shall be placed for other coil voltage specifications.

(3) Contact Capacity

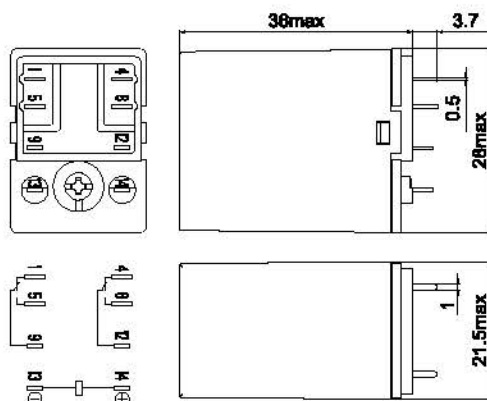
Product Model.	AC-12	AC-15	DC-12	DC-13
ZY2-J/ZYS2-J ZY3-J/ZYS3-J	240V/5A	240V/1A	30V/5A	30V/1A
ZY4-J/ZYS4-J	240V/3A	240V/0.5A	30V/3A	30V/0.5A

ZY/DY Series Control Replay

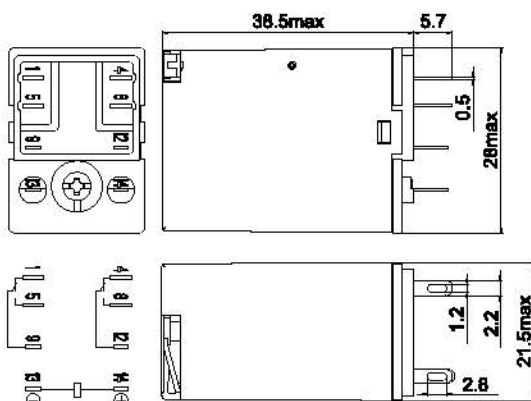
Appearance and Installation Sizes, Internal Wiring Diagram



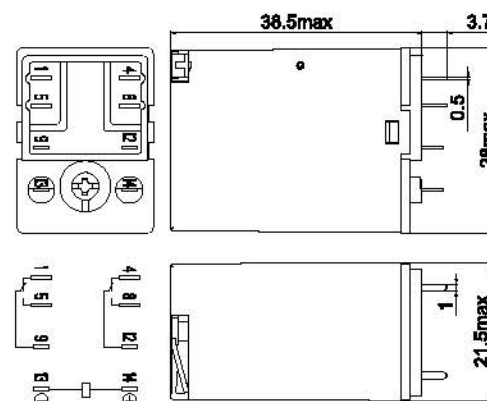
ZY2-J Appearance Size and Internal Wiring Diagram



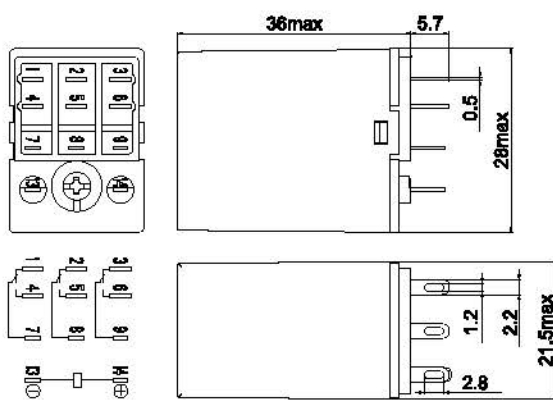
ZY2-J02 Appearance Size and Internal Wiring Diagram



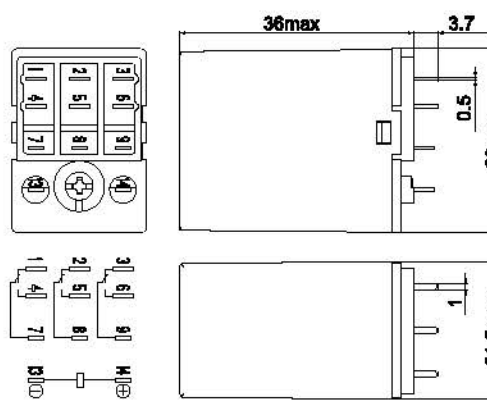
ZYS2-J Appearance Size and Internal Wiring Diagram



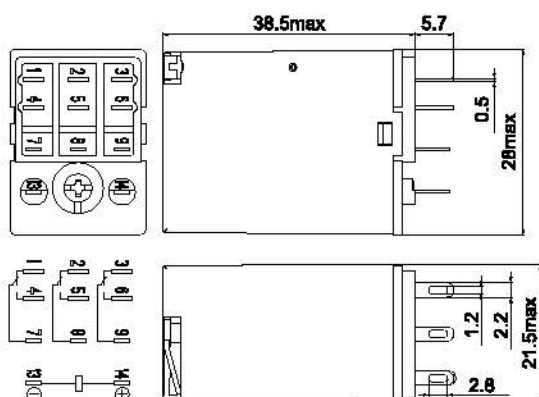
ZYS2-J02 Appearance Size and Internal Wiring Diagram



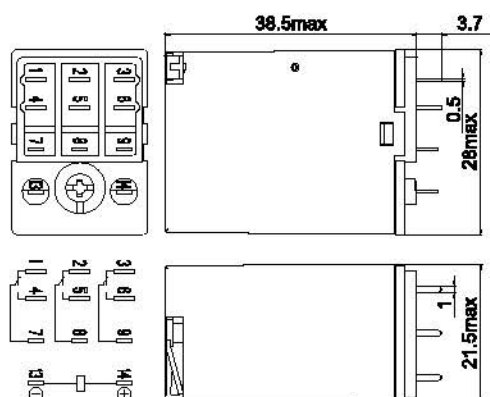
ZY3-J Appearance Size and Internal Wiring Diagram



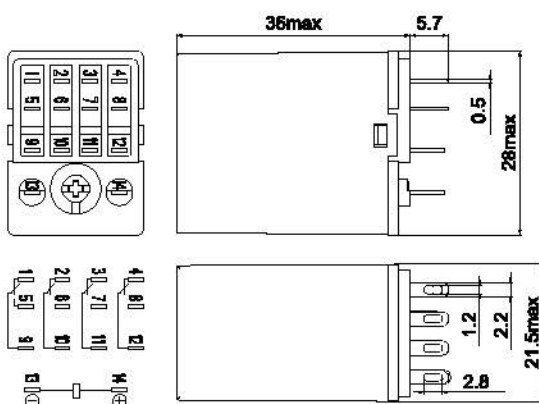
ZY3-J02 Appearance Size and Internal Wiring Diagram



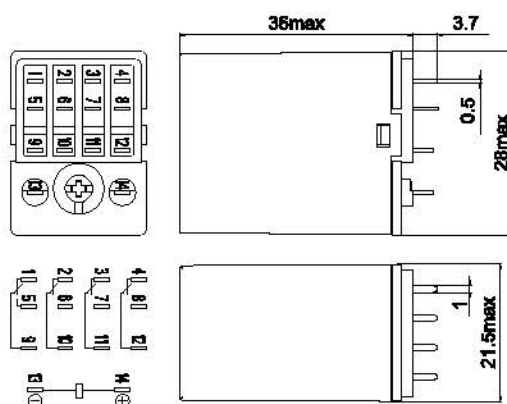
ZYS3-J Appearance Size and Internal Wiring Diagram



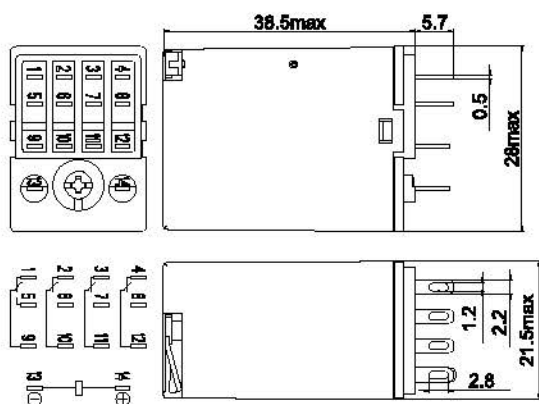
ZYS3-J02 Appearance Size and Internal Wiring Diagram



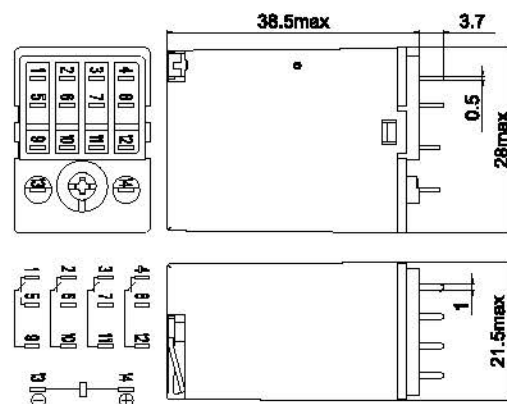
ZY4-J Appearance Size and Internal Wiring Diagram



ZY4-J02 Appearance Size and Internal Wiring Diagram

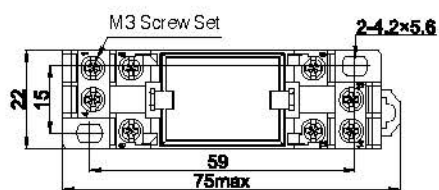
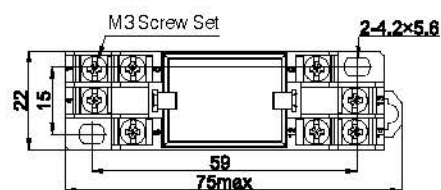
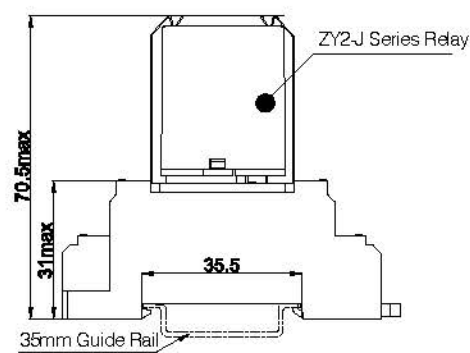
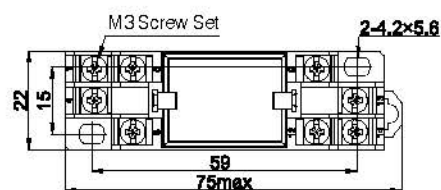
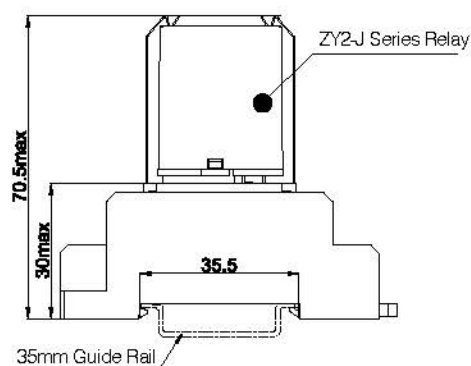


ZYS4-J Appearance Size and Internal Wiring Diagram



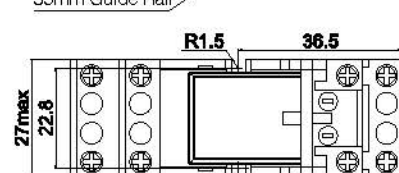
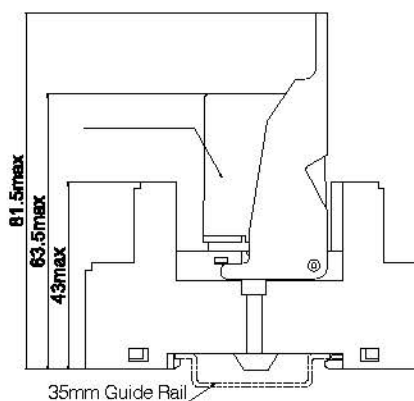
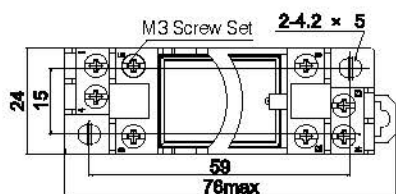
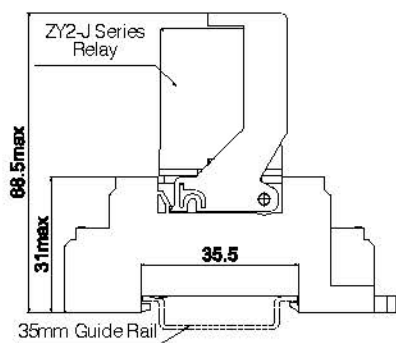
ZYS4-J02 Appearance Size and Internal Wiring Diagram

ZY/DY Series Control Relay



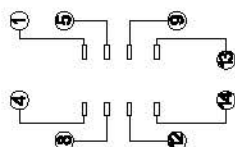
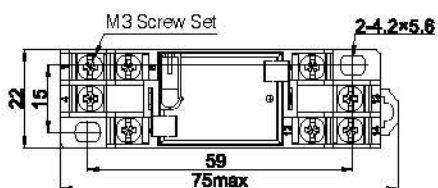
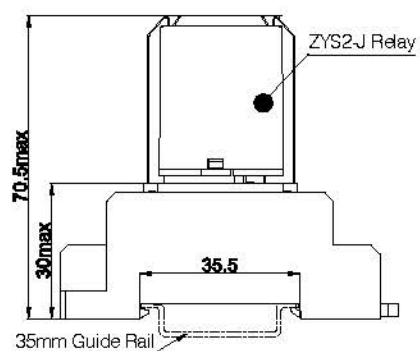
SYF08A Socket Appearance & Installation Sizes and Internal Wiring Diagram

SYF08A-E Socket Appearance & Installation Sizes and Internal Wiring Diagram

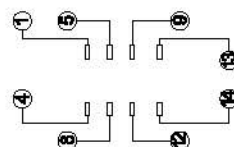
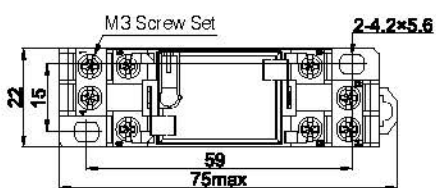
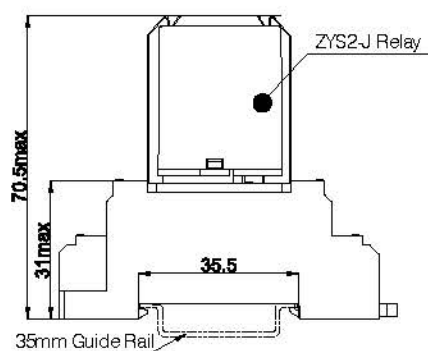


SYF08A-F Socket Appearance & Installation Sizes and Internal Wiring Diagram

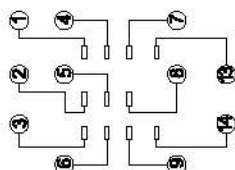
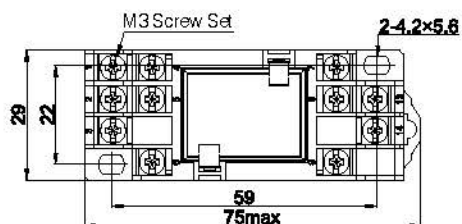
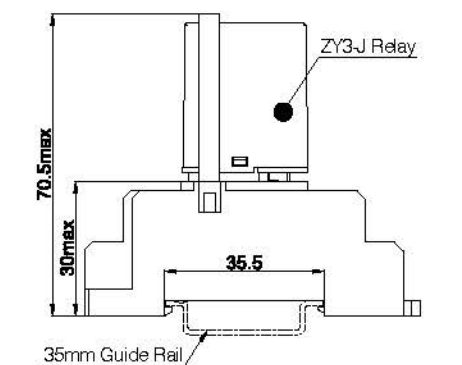
SKB08-E Socket Appearance & Installation Sizes and Internal Wiring Diagram



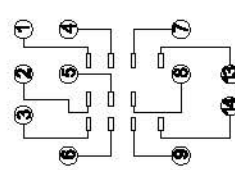
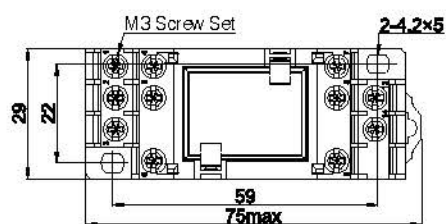
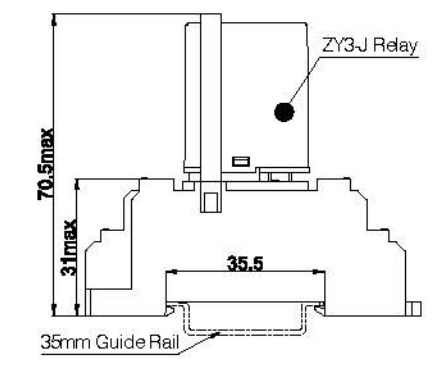
SYF08A1 Socket Appearance & Installation Sizes and Internal Wiring Diagram



SYF08A1-E Socket Appearance & Installation Sizes and Internal Wiring Diagram

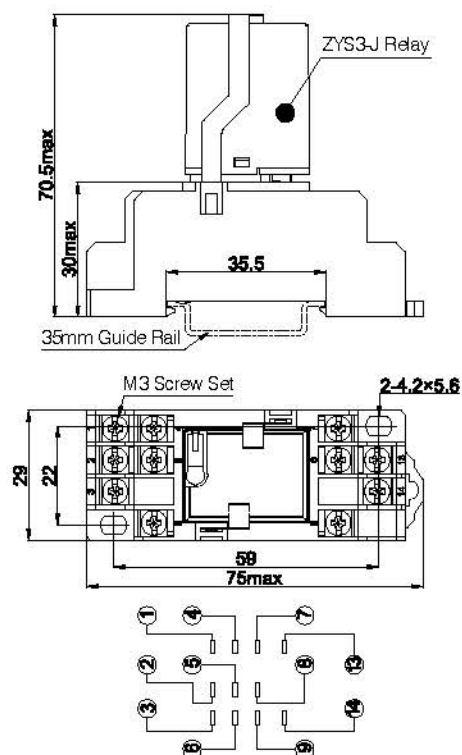


SYF11A Socket Appearance & Installation Sizes and Internal Wiring Diagram

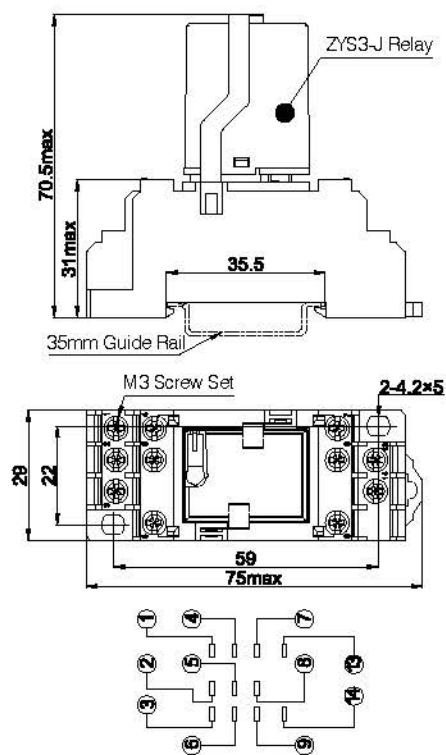


SYF11A-E Socket Appearance & Installation Sizes and Internal Wiring Diagram

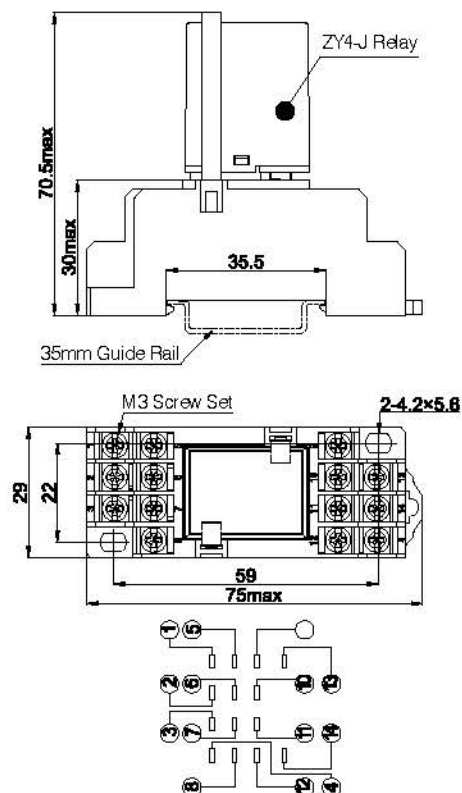
ZY/DY Series Control Replay



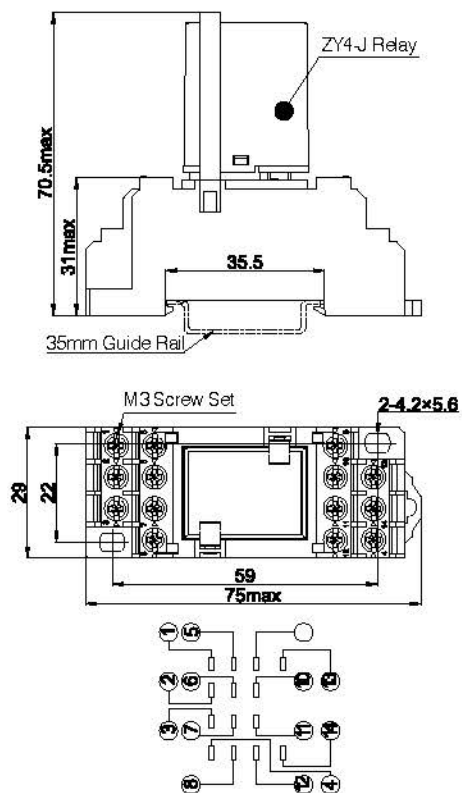
SYF11A1 Socket Appearance & Installation Sizes and Internal Wiring Diagram



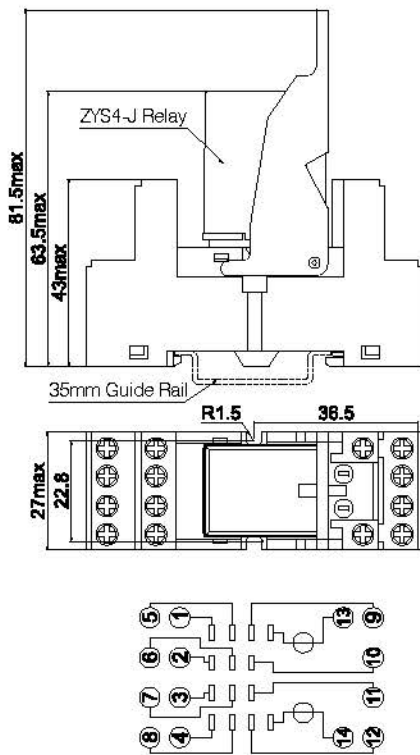
SYF11A1-E Socket Appearance & Installation Sizes and Internal Wiring Diagram



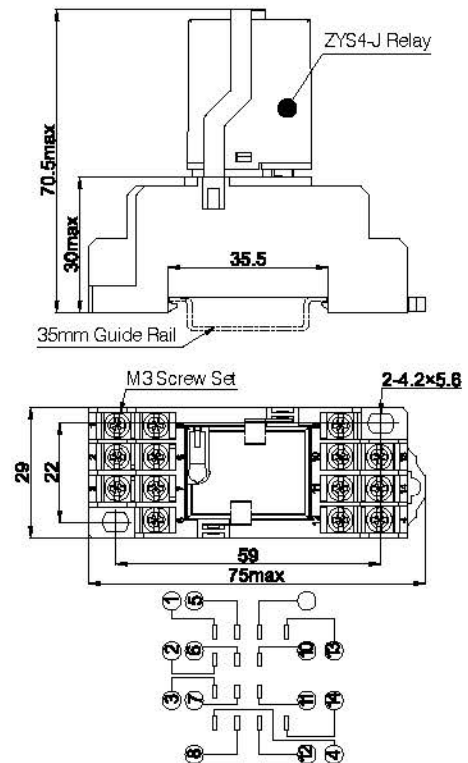
SYF14A Socket Appearance & Installation Sizes and Internal Wiring Diagram



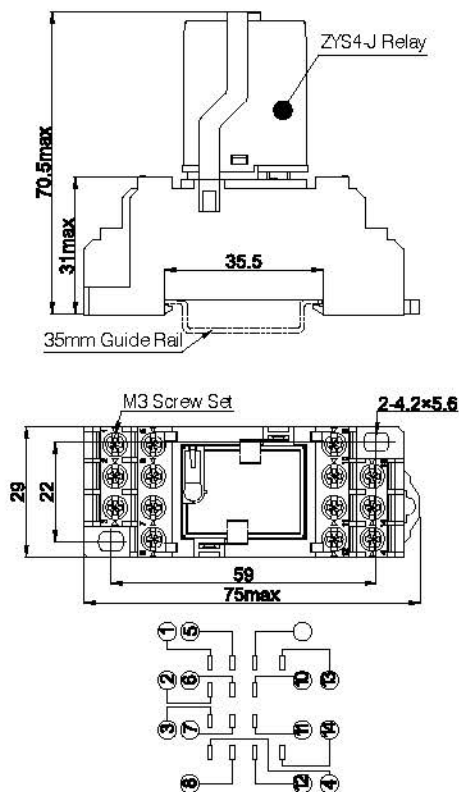
SYF14A-E Socket Appearance & Installation Sizes and Internal Wiring Diagram



SKB14-E Socket Appearance & Installation Sizes and Internal Wiring Diagram



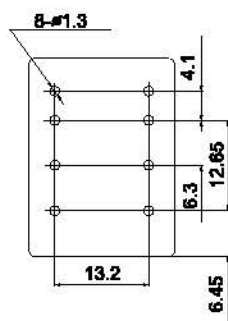
SYF14A1 Socket Appearance & Installation Sizes and Internal Wiring Diagram



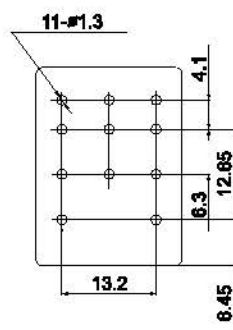
SYF14A1-E Socket Appearance & Installation Sizes and Internal Wiring Diagram

ZY/DY Series Control Replay

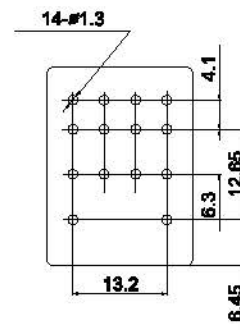
Hole Size



ZY2-J02/ZYS2-J02 Installation Hole Size



ZY3-J02/ZYS3-J02 Installation Hole Size



ZY4-J02/ZYS4-J02 Installation Hole Size

DY Series Relays

DY2-J Series



DY2-J (Standard Type)



Applicable Sockets
(STF08A)
Standard screw terminal type
with the width of 28mm



Applicable Sockets
(STF08A-E)
Safety type screw terminal
type with the width of 28mm



DYS2-J
(Manual test button
Type)



Applicable Sockets
(STF08A1)
Standard screw terminal type
with the width of 28mm



Applicable Sockets
(STF08A1-E)
Safety type screw terminal
type with the width of 28mm

Category

Classification	Model.	Coil Voltage
Standard Type	DY2-J	DC: 6V, 12V, 24V, 36V, 48V, 110V, 220V AC: 6V, 12V, 24V, 36V, 48V, 110V, 220V
Manual Button Type	DYS2-J	
Welded Terminal Type	DY2-J0	
Indicator Light Type	DY2N-J	
Surge Suppression Loop Type (DC specification)	DY2-JD2	

For example: Manual test button, 2 poles with indicator lights and surge suppression loop, and DC12V coil voltage, welded type, the large power relay as: DYS2N-J0D2DC12V

ZY/DY Series Control Replay

DY3 Series



DY3 (Standard Type)

Applicable Sockets
(STF11A)

Standard screw terminal type with
the width of 40mm

DY4 Series



DY4 (Standard Type)

Applicable Sockets
(STF14A)

Standard screw terminal type
with the width of 50mm

Category

Classification	Model.	Coil Voltage
Standard Type	DY3	
Welded Terminal Type	DY3-0	DC: 6V, 12V, 24V, 48V, 110V
Indicator Type	DY3N	AC: 12V, 24V, 48V, 110V, 220V
Surge Suppression Loop Type (DC specification)	DY3-D2	

For example: with indicator lights, 3 poles, with surge suppression loop, DC12V coil voltage, welded type, the large power relay as: DY3N-0D2DC12V.

Category

Classification	Model.	Coil Voltage
Standard Type	DY4	
Welded Terminal Type	DY4-0	DC: 6V, 12V, 24V, 48V, 110V
Indicator Light Type	DY4N	AC: 12V, 24V, 48V, 110V, 220V
Surge Suppression Loop Type (DC specification)	DY4-D2	

For example: with indicator lights, 4 poles, with surge suppression loop, DC12V coil voltage, welded type, the large power relay as: DY4N-0D2DC12V.

Technical data

(1) Basic Technical data

Item		DY2-J/DYS2-J	DY3	DY4
Ith		10A		
Ui		250V		
Max. Working Voltage of Coil		110%Us		
Action Time		≤20ms		
Release Time		≤30ms		
Contact Changeover & Release Time		≥0.15ms		
Contact Resistance		≤50mΩ		
Max. Working Voltage of Contact		AC250V, DC250V		
Insulation Resistance		≥100MΩ		
Uimp	Between Breaking Contacts	AC1100V, 50Hz, 1min		
	Between Contact Poles	AC1500V, 50Hz, 1min		
	Between Contact - Coil	AC1500V, 50Hz, 1min		
	Between Contact/Coil - Ground	AC1500V, 50Hz, 1min		
Operation Frequency		≤ 30 times/minute		
Vibration		10~55Hz, complex amplitude 1.0mm, 1min		
Impact		200m/s ² , 11ms		
Electrical endurance		2×10 ⁵ times	1×10 ⁵ times	1×10 ⁵ times
Mechanical endurance		2×10 ⁷ times	1×10 ⁷ times	1×10 ⁷ times
Ambient Temperature		-5℃ ~ +40℃		
Weight		About 40g	About 50g	About 70g

ZY/DY Series Control Replay

(2) Coil Specifications

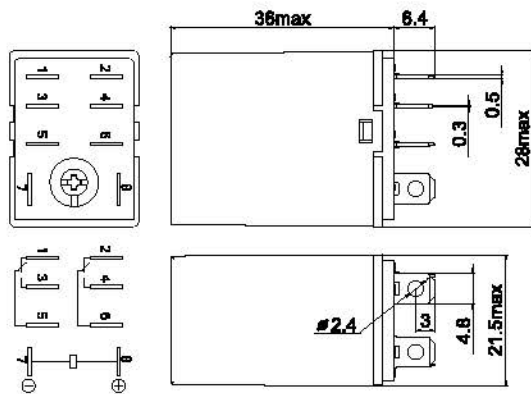
Rated Voltage	Operate Voltage	Release Voltage	Coil Resistance (Ω)			Coil Power Consumption		
			DY2-J/DYS2-J	DY3	DY4	DY2-J/DYS2-J	DY3	DY4
DC6V	$\leq 4.5V$	$\geq 0.6V$	40	25	24	About 0.9W	About 1.4W	About 1.5W
DC12V	$\leq 9V$	$\geq 1.2V$	160	100	96			
DC24V	$\leq 18V$	$\geq 2.4V$	640	400	350			
DC48V	$\leq 36V$	$\geq 4.8V$	2600	1700	1500			
DC110V	$\leq 82.5V$	$\geq 11V$	11500	8400	6500			
DC220V	$\leq 165V$	$\geq 220V$	46500	-	-			
AC12V	$\leq 9.6V$	$\geq 3.6V$	35	25.5	24	About 1.2VA	About 2VA	About 2.5VA
AC24V	$\leq 19.2V$	$\geq 7.2V$	160	102	96			
AC48V	$\leq 38.4V$	$\geq 14.4V$	590	410	350			
AC110V	$\leq 88V$	$\geq 33V$	3500	2900	1500			
AC220V	$\leq 176V$	$\geq 66V$	13800	9000	6500			

- Notes: 1. The above data are tested at room temperature (25℃).
 2. AC specification is the parameter at 50Hz.
 3. The special order shall be placed for other coil voltage specifications.

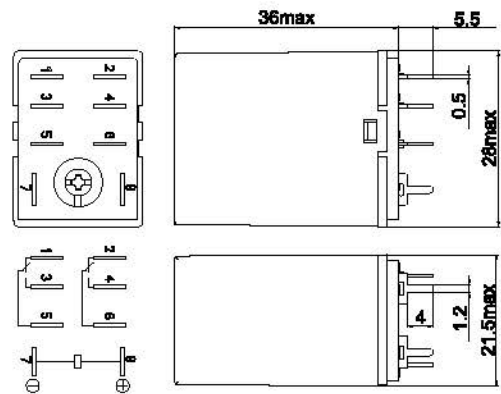
(3) Maximum Contact Capacity

Product Model.	AC-12	AC-15	DC-12	DC-13
DY2-J/DYS2-J DY3 /DY4	240V/10A	240V/2A	30V/10A	30V/2A

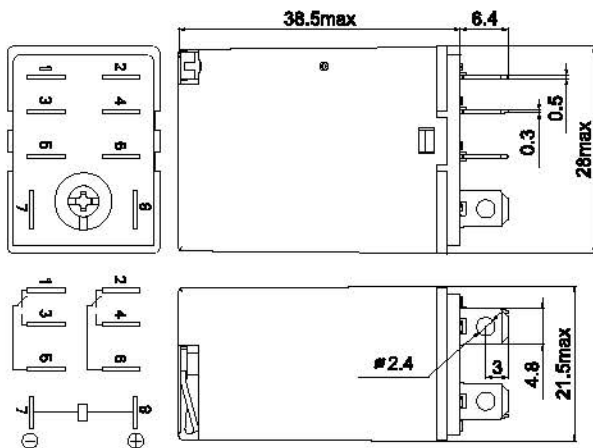
Appearance and Installation Sizes, Internal Wiring Diagram



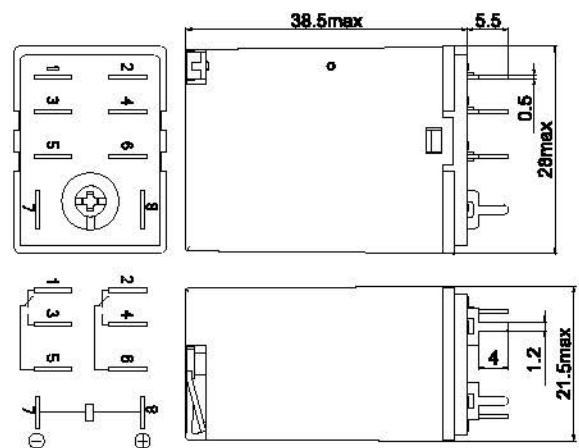
DY2-J Appearance Size and Internal Wiring Diagram



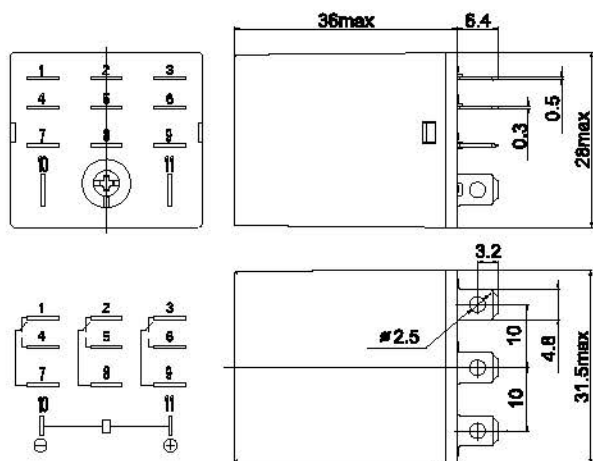
DY2-J0 Appearance Size and Internal Wiring Diagram



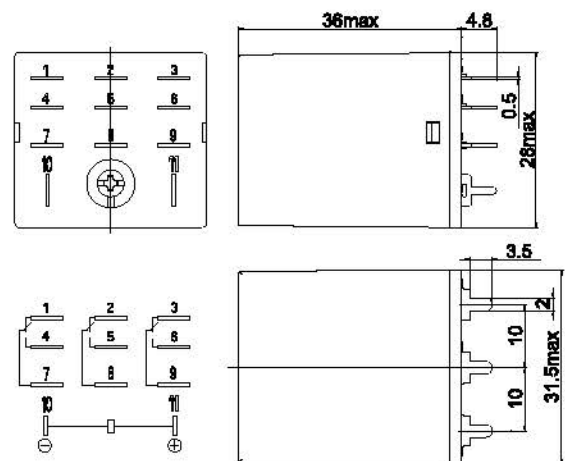
DYS2-J Appearance Size and Internal Wiring Diagram



DYS2-J0 Appearance Size and Internal Wiring Diagram

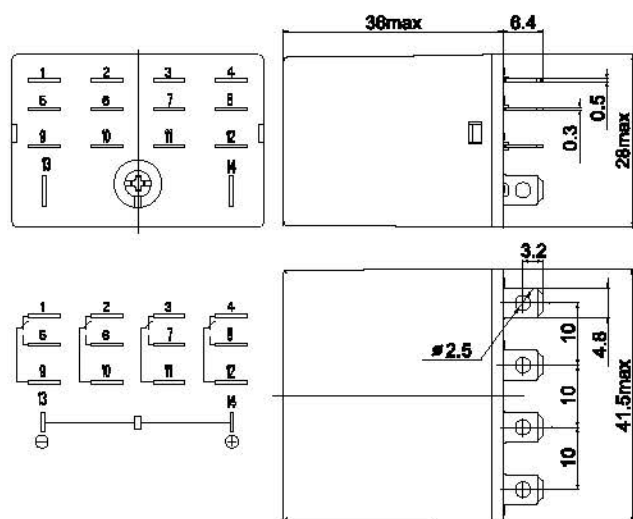


DY3 Appearance Size and Internal Wiring Diagram

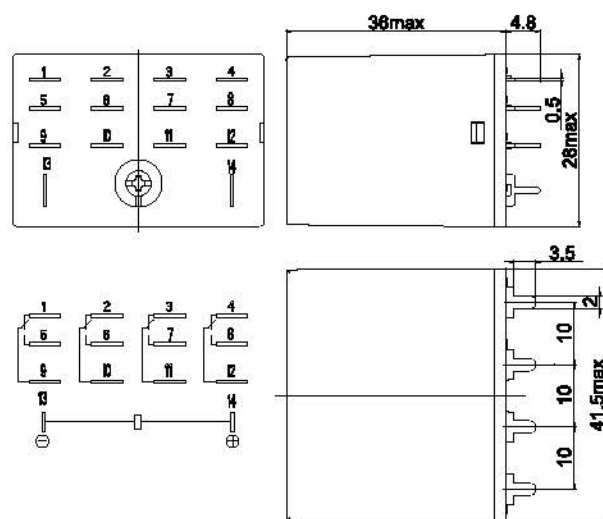


DY3-0 Appearance Size and Internal Wiring Diagram

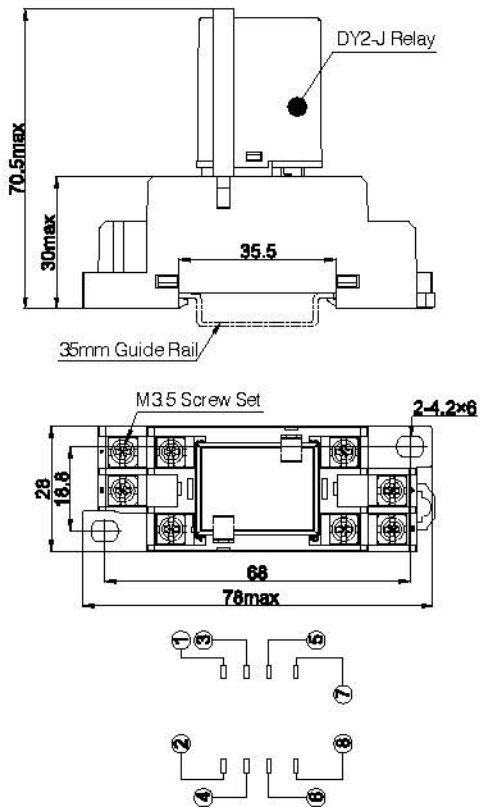
ZY/DY Series Control Replay



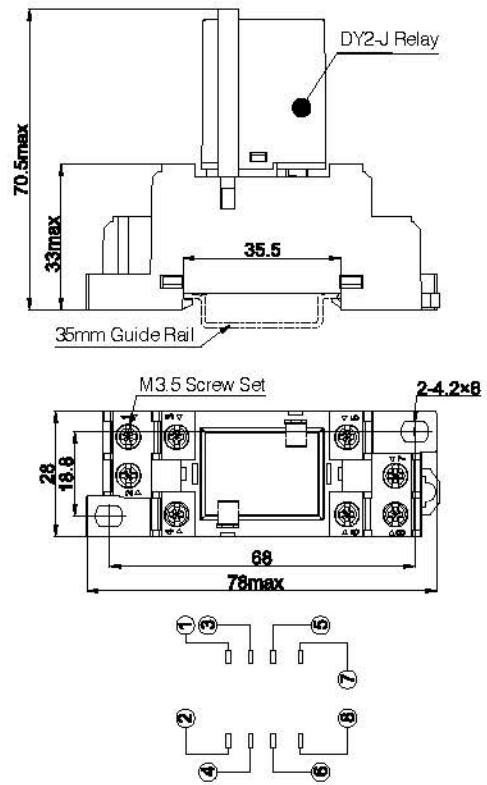
DY4 Appearance Size and Internal Wiring Diagram



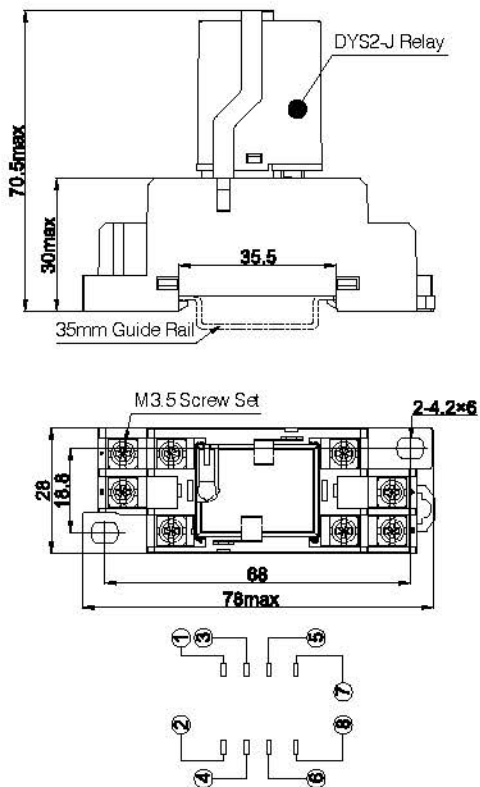
DY4-0 Appearance Size and Internal Wiring Diagram



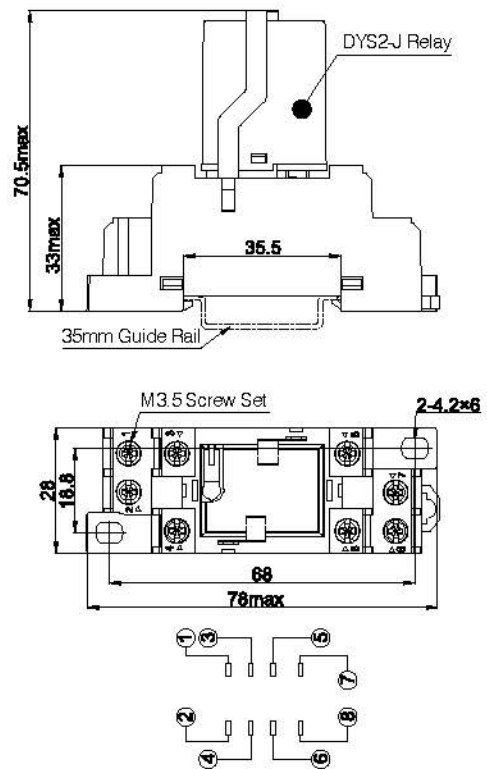
STF08A Socket Appearance & Installation Sizes and Internal Wiring Diagram



STF08A-E Socket Appearance & Installation Sizes and Internal Wiring Diagram

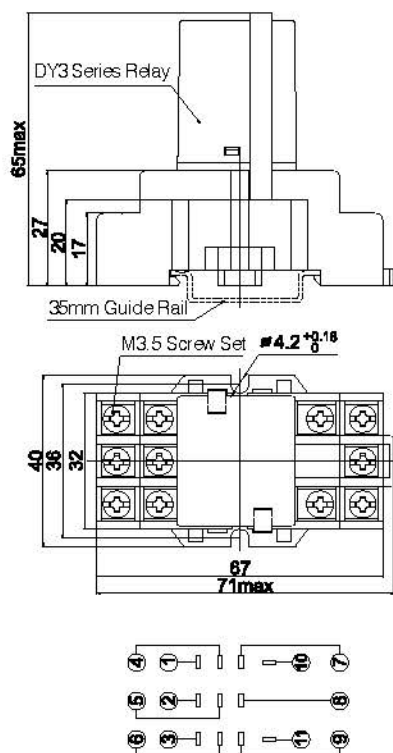


STF08A1 Socket Appearance & Installation Sizes and Internal Wiring Diagram

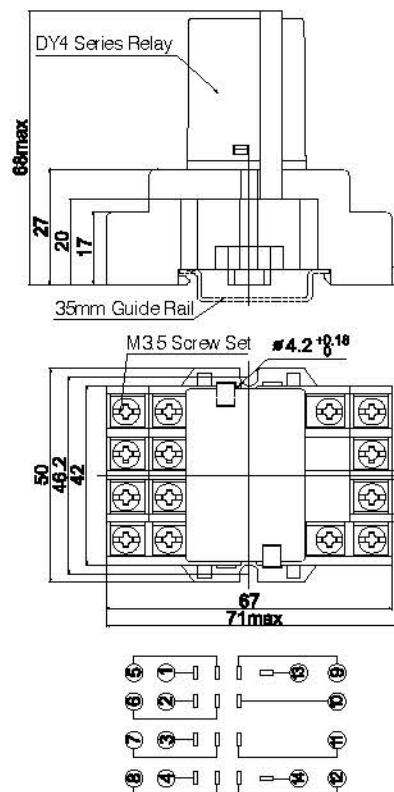


STF08A1-E Socket Appearance & Installation Sizes and Internal Wiring Diagram

ZY/DY Control Replay

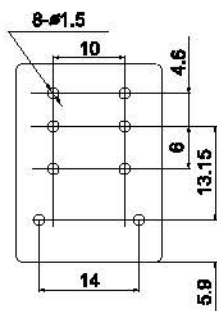


STF11A Socket Appearance & Installation Sizes and Internal Wiring Diagram

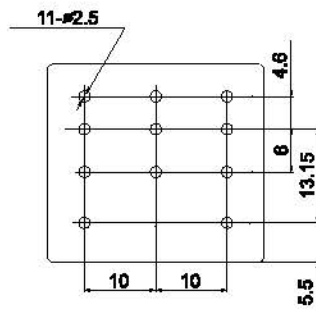


STF14A Socket Appearance & Installation Sizes and Internal Wiring Diagram

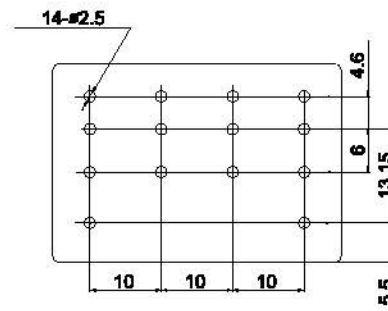
Hole Sizes



DY2-J0/DYS2-J0 Installation Hole Size



DY3-0 Installation Hole Size



DY4-0 Installation Hole Size

Product Cross-reference

APT	ZY2-J	ZY2-J02	ZY3-J	ZY3-J02	ZY4-J	ZY4-J02
OMRON	MY2J	MY2J-02	MY3J	MY3J-02	MY4J	MY4J-02
FUJI	HH52P	HH52B	HH53P	HH53B	HH54P	HH54B
NAIS	HC2-H	HC2-HP	HC3-H	HC3-HP	HC4-H	HC4-HP
IDEC	RM2S	RM2V			RY4S	RY4V
APT	DY2-J	DY2-J0	DY3	DY3-0	DY4	DY4-0
OMRON	LY2J	LY2J-0	LY3J	LY3J-0	LY4J	LY4J-0
FUJI	HH62P	HH62B	HH63P	HH63B	HH64P	HH64B
NAIS	HL2-H	HL2-HP				
IDEC	RH2B	RH2V2	RH3B	RH3V2	RH4B	RH4V2

Cautions

- Please pay attention to the coil polarities (+, -) of the relays with polarities.
- The application of the rated voltage to the coils is a basic operation. Moreover, please apply the rectangular wave to DC coils and sine wave to AC coils.
- Please note that the voltage applied to the coils shall not exceed the maximum allowable voltage.
- The rated control capacity or life has certain standard. The contact status or service life will be different very obviously due to the load categories or the differences of various conditions, please confirm it before use.
- It is recommended that the relay is installed with the contact up and coil down.
- When the relay of the welded terminal is welded, it is suggested to be welded manually and the cleaning shall be avoided after welding if possible.
- The action frequency of the relay shall not exceed the specified frequency. Otherwise, it may cause the wrong action and thus affect the service life of the relay.
- It is suggested that the same polarity shall be used between the relay contacts.

ZY/DY Series Control Replay

Application

ZY/DY series relay are the components of executing the control and isolation functions in automatic control circuit, and are automatic switches that can control large current and high voltage with low voltage and small current. They are widely used in the fields such as printing machines, injection molding machines, textile machines, packing machines, railway, medical machines and control cabinet etc.



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Siemens Electrical Apparatus Ltd., Suzhou, APT Sales and Marketing
Rm 301, Tsidi Building No.55, Lane 777, West Guangzhong Road Shanghai

Zip Code: 200072

TEL: (021)56553757

URL: <https://siemens-apt.com>

FAX: (021)56551750

Email: rfq@siemens-apt.com

