



- Optional Integral LED (Red for AC, Green for DC coils).
- Optional Back EMF Diode for DC coils.
- Flange mounting styles.
- Compatible with industry standard sockets (plug-in).
- PCB mounting option.



### Contacts

Contact arrangement	SPST-NO(DM), SPDT, DPST-NO, DPDT, 3PDT, 4PDT
Contact material	AgNi90/10 +0.2um Au, AgSnO <sub>2</sub>
Max switching voltage	277VAC, 30VDC
Rated load	AC1 SPST, SPDT: 16A/240VAC; DPDT, 3PDT, 4PDT: 10A/240VAC
	DC1 SPST, SPDT: 16A/30VDC; DPDT, 3PDT, 4PDT: 10A/30VDC
Initial contact resistance	≤ 100mΩ

### Coil

Rated Voltage	DC	12... 220V
	AC	12... 380V 50/60Hz
Rated power consumption	DC	SPST, SPDT, DPDT: 0.9W; 3PDT: 1.4W; 4PDT: 1.5W
	AC	SPST, SPDT, DPDT: 1.2VA; 3PDT: 2VA; 4PDT: 2.5VA

### Insulation

Insulation resistance	≥100MΩ at 500VDC, 50%RH	
Dielectric strength	coil to contact	1500Vrms, 1min, 1mA
	contact to contact	1000Vrms, 1min, 1mA
between adjacent contacts	1500Vrms, 1min, 1mA	

### General Data

Operate / bounce time	≤ 15ms / ≤ 3ms	
Release / bounce time	≤ 10ms / ≤ 1ms	
Electrical life	1 x 10 <sup>5</sup> (at rated load)	
Mechanical life	1 x 10 <sup>7</sup> (max. switching rate = 1200ops/hr)	
Ambient temperature	operate	-40 to 70°C
	storage	-40 to 80°C (no icing)
Shock resistance	Functional: 10g 11ms	
Vibration resistance	DA 1.0mm 10-55Hz	
Dimensions	L x W x H See Fig. 1	
Weight	approx. SPST, SPDT, DPDT: ≤ 35g ; 3PDT: ≤ 50g ; 4PDT: ≤ 65g	

### Ordering Code

DY - 20 12 - 2 3 - 1024 - LD

DY: Series

20: AgNi90/10+0.2um Au  
30: AgSnO<sub>2</sub>

11: SPDT (1C/O)  
51: SPST-NO (1N/O) 3mm gap  
12: DPDT (2C/O)  
22: DPST-NO (2N/O) 1.5mm gap  
13: 3PDT (3C/O)  
14: 4PDT (4 C/O)

23: for plug-in sockets (IP40)  
25: for PCB mounting (IP40)  
43: top mounting flange (IP40)\*  
\* SPDT & DPDT types only

1: DC coil  
5: AC Coil 50/60Hz

See Coil Tables 1 to 6 for full code.

### Options

Blank: No options (standard).

L: LED (Green for DC, Red for AC Coils).\*

\* Not available for top mounting flange type (Code 43).

D: Back EMF (parallel) Diode. DC coils only.

# DY series

## industrial plug-in power relay



**Coil Data (DC voltage) SPDT, DPDT** Table 1

Coil Voltage Code	Nominal Voltage (VDC)	Coil Resistance ( $\Omega$ ) $\pm 10\%$	Power Consumption (mW)	Must Operate Voltage max. (VDC)	Must Release Voltage min. (VDC)	Max. Allowable Voltage (VDC)
1012	12	160	900	9.0	1.2	13.2
1024	24	640	900	18.0	2.4	26.4
1110	110	13750	900	82.5	11.0	121.0
1220*	220	55000	900	165.0	22.0	242.0

\*220VDC coil not UL

**Coil Data (AC voltage 50/60Hz) SPDT, DPDT** Table 2

Coil Voltage Code	Nominal Voltage (VAC)	Coil Resistance ( $\Omega$ ) $\pm 10\%$	Power Consumption (VA)	Must Operate Voltage max. (VAC)	Must Release Voltage min. (VAC)	Max. Allowable Voltage (VAC)
5012	12	42	1.2	9.0	1.2	13.2
5024	24	168	1.2	18.0	2.4	26.4
5110	110	3532	1.2	82.5	11.0	121.0
5220	220/230	14259	1.2	165.0	22.0	242.0

**Coil Data (DC voltage) 3PDT** Table 3

Coil Voltage Code	Nominal Voltage (VDC)	Coil Resistance ( $\Omega$ ) $\pm 10\%$	Power Consumption (W)	Must Operate Voltage max. (VDC)	Must Release Voltage min. (VDC)	Max. Allowable Voltage (VDC)
1012	12	96	1.5	9.6	3.6	13.2
1024	24	384	1.5	19.2	7.2	26.4
1110	110	8088	1.5	88.0	33.0	121.0
1220*	220	32352	1.5	176.0	66.0	242.0

\*220VDC coil not UL

**Coil Data (AC voltage 50/60Hz) 3PDT** Table 4

Coil Voltage Code	Nominal Voltage (VAC)	Coil Resistance ( $\Omega$ ) $\pm 10\%$	Power Consumption (VA)	Must Operate Voltage max. (VAC)	Must Release Voltage min. (VAC)	Max. Allowable Voltage (VAC)
5012	12	20	2.5	9.0	1.2	13.2
5024	24	80	2.5	18.0	2.4	26.4
5110	110	1696	2.5	82.5	11.0	121.0
5220	220/230	6814	2.5	165.0	22.0	242.0

**Coil Data (DC voltage) 4PDT** Table 5

Coil Voltage Code	Nominal Voltage (VDC)	Coil Resistance ( $\Omega$ ) $\pm 10\%$	Power Consumption (W)	Must Operate Voltage max. (VDC)	Must Release Voltage min. (VDC)	Max. Allowable Voltage (VDC)
1012	12	96	1.5	9.0	1.2	13.2
1024	24	384	1.5	18.0	2.4	26.4
1110	110	8088	1.5	82.5	11.0	121.0
1220*	220	32352	1.5	165.0	22.0	242.0

\*220VDC coil not UL

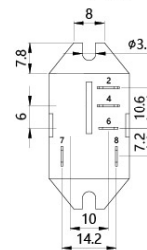
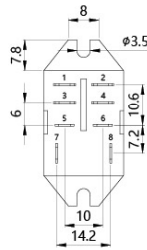
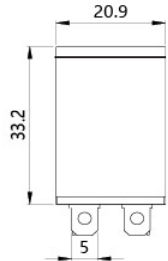
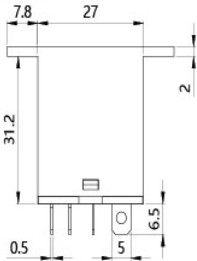
**Coil Data (AC voltage 50/60Hz) 4PDT** Table 6

Coil Voltage Code	Nominal Voltage (VAC)	Coil Resistance ( $\Omega$ ) $\pm 10\%$	Power Consumption (VA)	Must Operate Voltage max. (VAC)	Must Release Voltage min. (VAC)	Max. Allowable Voltage (VAC)
5012	12	16.8	3.0	9.0	1.2	13.2
5024	24	67.2	3.0	18.0	2.4	26.4
5110	110	1415	3.0	82.5	11.0	121.0
5220	220/230	5661	3.0	165.0	22.0	242.0

Dimensions

Fig. 1

SPDT & DPDT - Chassis Mount



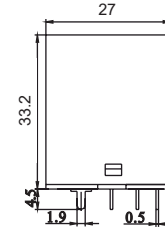
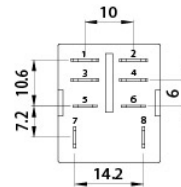
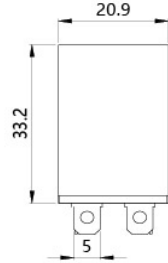
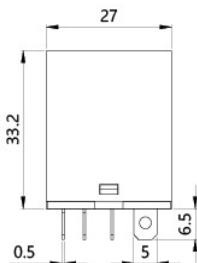
SPDT - Chassis Mount  
Contact terminals 1,3 & 5 not fitted.

SPDT - Plug-in & PCB  
Contact terminals 2,3 & 6 not fitted.

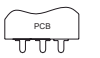
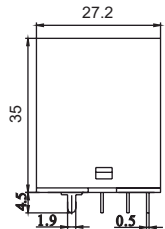
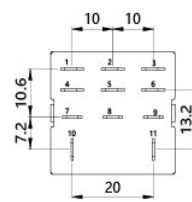
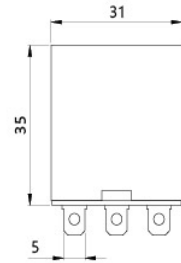
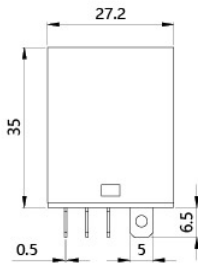
SPST-NO (DM) - Plug-in & PCB  
Contact terminals 1, 2, 5 & 6 not fitted.

DPST-NO - Plug-in & PCB  
Contact terminals 1 & 2 not fitted.

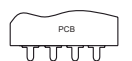
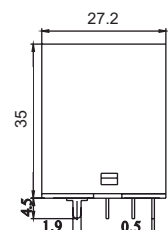
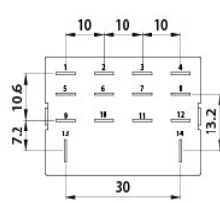
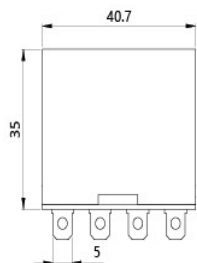
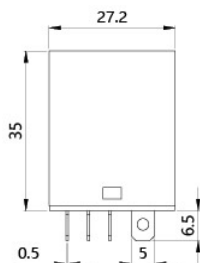
SPDT & DPDT - Plug-in & PCB



3PDT - Plug-in & PCB



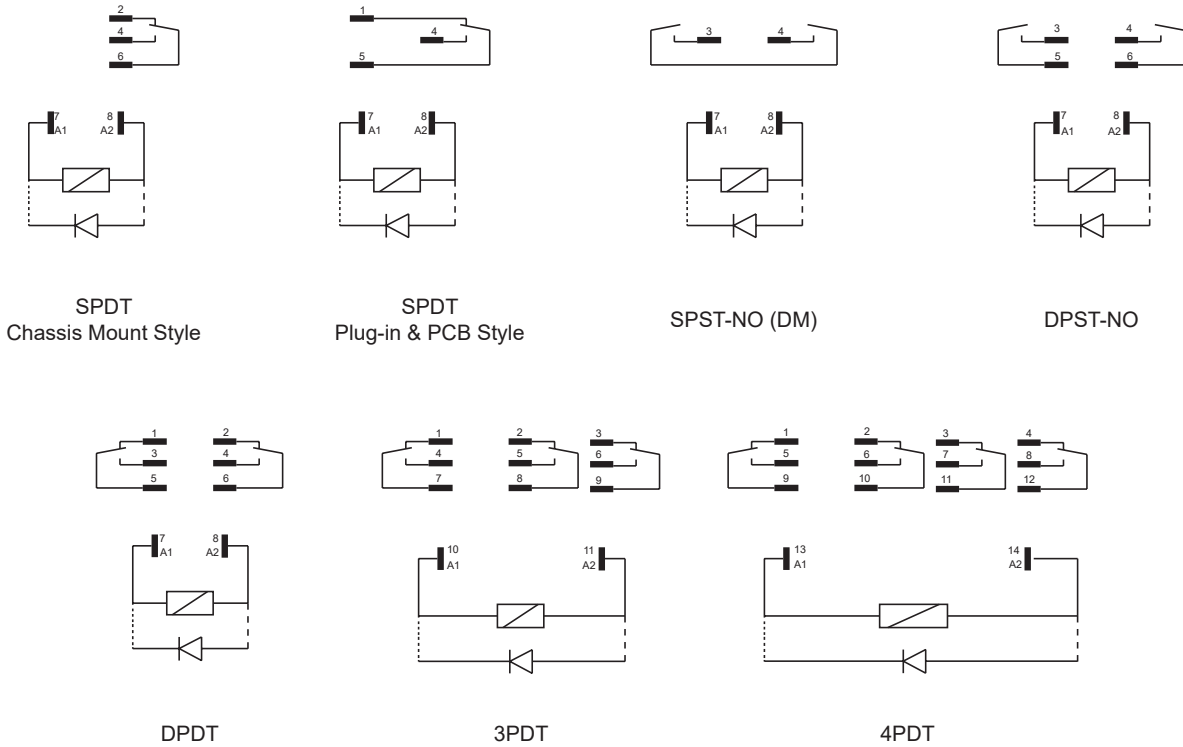
4PDT - Plug-in & PCB



Dimensions in mm

Connection Diagrams

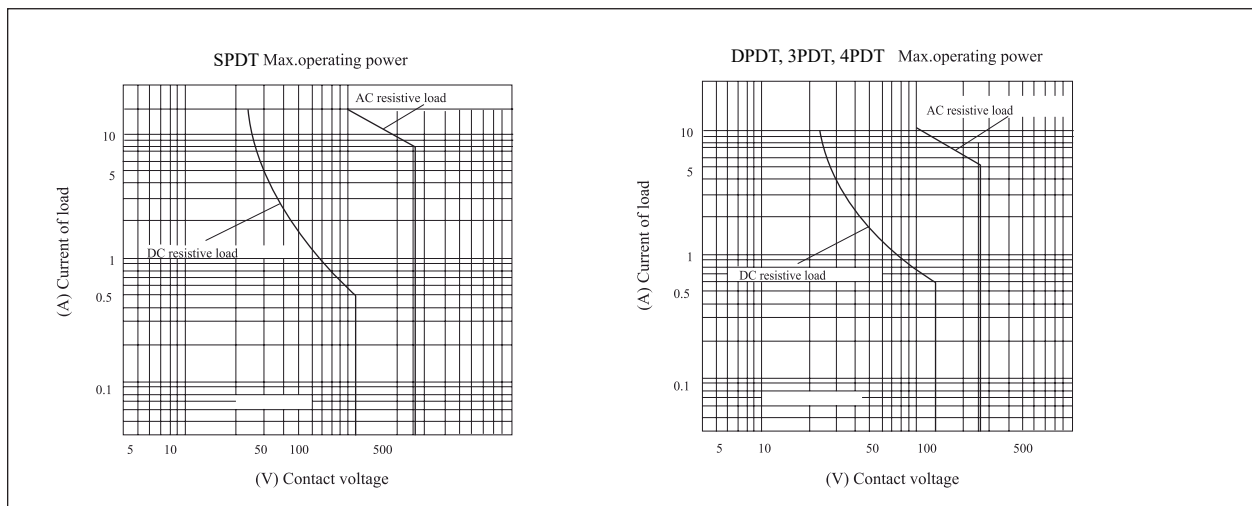
Fig. 2


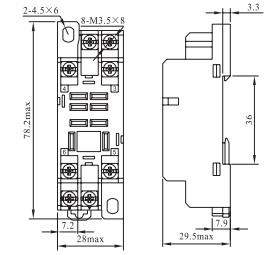
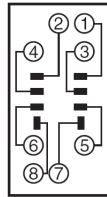

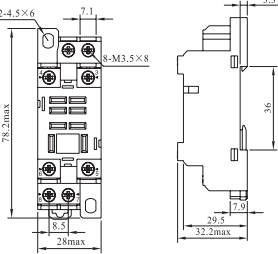
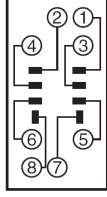
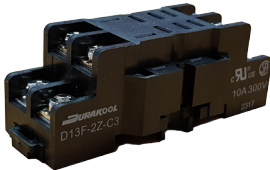
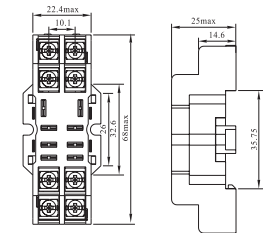
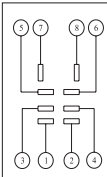

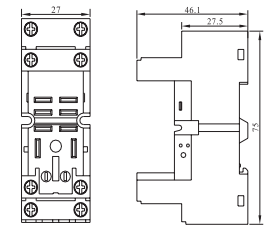
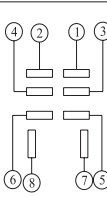

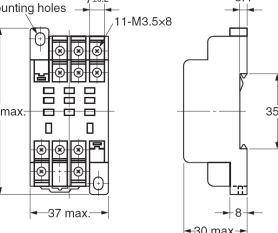
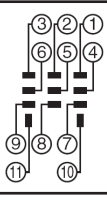

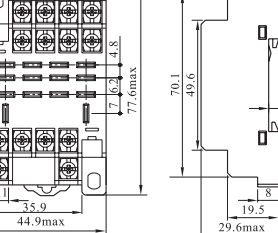
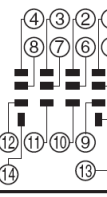


View on terminals. Diode shown is optional for DC coils.

Reference Curves

Fig. 3



DIN Rail and Chassis Mounting Sockets for DY relays		Fig 4	
<p>D13F-2Z-C1</p> 	<p>Rated voltage : 250VAC            Rated current : 10A            Insulation voltage : <math>\geq 3KV</math>            Socket material : PA66-S250F6 (V1/V0)            Contacts spring material : QSn6.5-0.1</p> <p>Options:            Steel Hold down spring: JH-006RC</p>		
<p>D13F-2Z-C2</p> 	<p>Options:            Steel Hold down spring: JH-006RC</p>		
<p>D13F-2Z-C3</p> 	<p>Rated voltage : 250VAC            Rated current : 10A            Insulation voltage : <math>\geq 3KV</math>            Socket material : PA66+GF (V1/V0)            Contacts spring material : QSn6.5-0.1</p> <p>Options:            Steel Hold down spring: JH-006RC</p>		
<p>D13F-2Z-C4</p> 	<p>Rated voltage : 300VAC            Rated current : 15A            Insulation voltage : <math>\geq 3KV</math>            Socket material : PA66+GF (V1/V0)            Contacts spring material : QSn6.5-0.1</p> <p>Options:            Steel Wire Retainer: JH-36MS-B            Plastic Ejector Clip: JH-36PS-A            Plug-in Accessory Modules</p>		
<p>D13F-3Z-C3</p> 	<p>Rated voltage : 300VAC            Rated current : 10A            Insulation voltage : <math>\geq 2.5KV</math>            Socket material : PA66+GF (V1/V0)            Contacts spring material : QSn6.5-0.1</p> <p>Options:            Steel Hold down spring: JH-006RC</p>	<p>Two 4.5 x 6 mounting holes</p> 	
<p>D13F-4Z-C1</p> 	<p>Rated voltage : 250VAC            Rated current : 10A            Insulation voltage : <math>\geq 3KV</math>            Socket material : PA66+GF (V1/V0)            Contacts spring material : QSn6.5-0.1</p> <p>Options:            Steel Hold down spring: JH-006RC</p>		





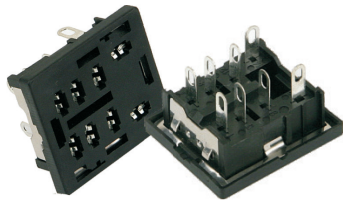
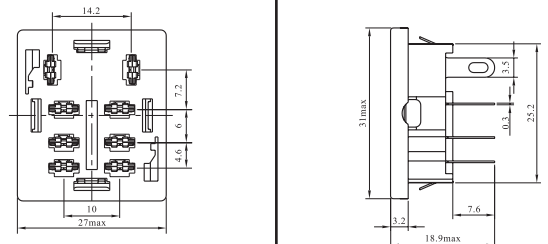
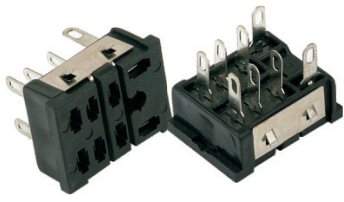
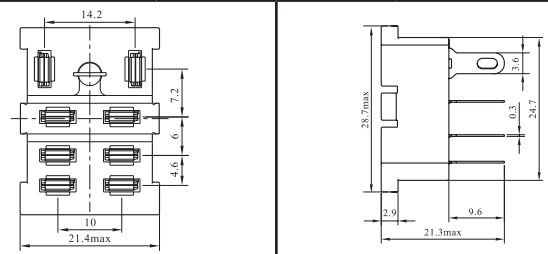
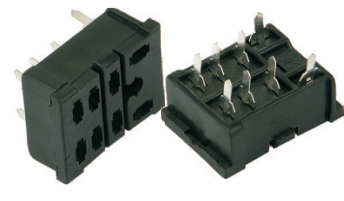
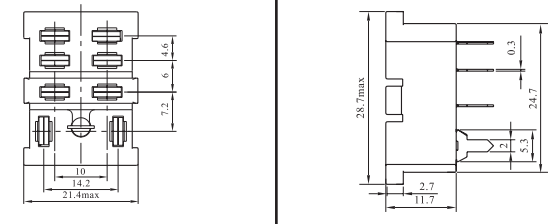

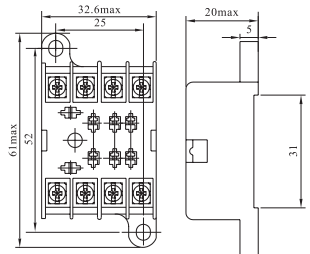
Dimensions in mm

# DY series

## industrial plug-in power relay

### Accessories and Miscellaneous Sockets for DY relays

Fig 5

<b>Plug-in Modules for D13F-2Z-C4</b> 		DM41G-BK Green LED 6/24VDC DM41R-BK Red LED 6/24VDC DM61G-BK Green LED 6/24VAC/DC with diode DM63G-BK Green LED 110/230VAC/DC DM63R-BK Red LED 110/230VAC/DC DM91G-BK Green LED 6/24VAC/DC with varistor DM93G-BK Green LED 110/230VAC/DC with varistor  Other modules upon request.			
<b>JH-36MS-B Metal Spring Wire Retainer</b> 		<b>JH-006RC Metal Hold-down Spring (1 pair)</b> 		<b>JH-36PS-A Plastic Ejector Clip</b> 	
<b>D13F-2Z-A</b> 		Rated voltage : 250VAC Rated current : 10A Insulation voltage : $\geq 3KV$ Socket material : PBT (V1/V0) Contacts spring material : QSn6.5-0.1			
<b>D13F-2Z-A1</b> 		Rated voltage : 250VAC Rated current : 10A Insulation voltage : $\geq 3KV$ Socket material : PBT (V1/V0) Contacts spring material : QSn6.5-0.1			
<b>D13F-2Z-A2</b> 		Rated voltage : 250VAC Rated current : 10A Insulation voltage : $\geq 3KV$ Socket material : PA66-S250F6 (V1/V0) Contacts spring material : QSn6.5-0.1			
<b>D13F-2Z-2B</b> 		Rated voltage : 250VAC Rated current : 10A Insulation voltage : $\geq 3KV$ Socket material : PBT (V1/V0) Contacts spring material : QSn6.5-0.1			

Dimensions in mm