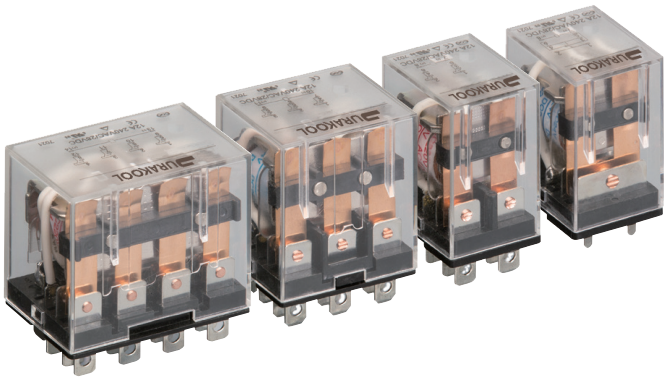
DY series
Industrial Plug-in Power Relay



- 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

CE cULus E325835 RoHS Compliant

Contacts

Contact arrangement		SPST-NO, SPDT, DPST-NO, DPDT, 3PDT, 4PDT
Contact material		AgNi90/10 (non-UL), $AgSnO_2$ (UL)
Max. switching voltage		277VAC, 28VDC
Rated load	AC1	SPST, SPDT: 16A/240VAC
	AC1	DPDT, 3PDT, 4PDT: 12A/240VAC
	DC1	SPST, SPDT: 16A/30VDC
	DC1	DPDT, 3PDT, 4PDT: 12A/30VDC
Initial contact resistance		≤ 100mΩ

Coil

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

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	1000Vrms, 1min, 1mA

General Data

Operate / bounce time	≤ 15ms / ≤ 3ms
Release / bounce time	≤ 10ms / ≤ 1ms
Electrical life	1 x 10^5 (at rated load)
Mechanical life	1 x 10^7 (max. switching rate = 1200ops/hr)

Environmental

Ambient temperature	operating	-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

D Y - 2 0 1 2 2 3 - 1 0 2 4 - L D

Series

Contact material
- 20: AgNi90/10
- 30: $AgSnO_2$

Contact configurations
- 11: SPDT (1C/O)
- 12: DPDT (2C/O)
- 13: 3PDT (3C/O)
- 14: 4PDT (4C/O)
- 21: SPST-NO (1N/O)
- 22: DPST-NO (2N/O)

Mounting & terminations (IP40)
- 23: for plug-in sockets
- 25: for PCB mounting
- 43: top mounting flange*

* SPST, SPDT & DPDT types only

Coil Code
- 1: DC Coil with diode
- 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.

Coil Data (DC voltage) SPDT, DPDT						Table 1
Coil code	Nominal voltage (VDC)	Coil resistance (Ω) ±10%	Power consumption (VA)	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 code	Nominal voltage (VAC)	Coil resistance (Ω) ±10%	Power consumption (W)	Must operate voltage max. (VAC)	Must release voltage min. (VAC)	Max. allowable voltage (VAC)
5012	12	42	1.2	9.6	3.6	13.2
5024	24	168	1.2	19.2	7.2	26.4
5110	110	3532	1.2	88.0	33.0	121.0
5220	220/230	14259	1.2	176.0	66.0	242.0

Coil Data (DC voltage) 3PDT						Table 3
Coil code	Nominal voltage (VDC)	Coil resistance (Ω) ±10%	Power consumption (VA)	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) 3PDT						Table 4
Coil code	Nominal voltage (VAC)	Coil resistance (Ω) ±10%	Power Consumption (W)	Must operate voltage max. (VAC)	Must release voltage min. (VAC)	Max. allowable voltage (VAC)
5012	12	20	2.5	9.6	3.6	13.2
5024	24	80	2.5	19.2	7.2	26.4
5110	110	1696	2.5	88.0	33.0	121.0
5220	220/230	6814	2.5	176.0	66.0	242.0

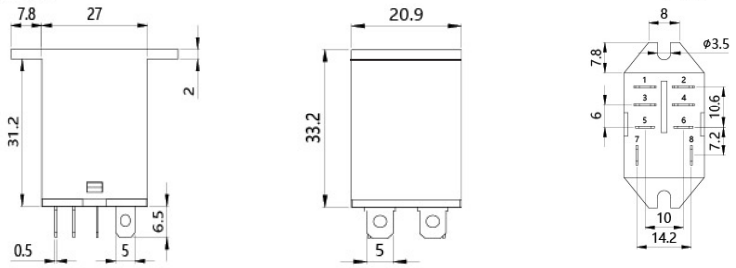
Coil Data (DC voltage) 4PDT						Table 5
Coil code	Nominal voltage (VDC)	Coil resistance (Ω) ±10%	Power consumption (VA)	Must operate voltage max. (VDC)	Must release voltage min. (VDC)	Max. allowable voltage (VDC)
1012	12	96	1.5	9.0	1.2	13.2
1024	24	384	1.5	18.0	2.4	26.4
1110	110	8088	1.5	82.5	11.0	121.0
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 code	Nominal voltage (VAC)	Coil resistance (Ω) ±10%	Power consumption (W)	Must operate voltage max. (VAC)	Must release voltage min. (VAC)	Max. allowable voltage (VAC)
5012	12	16.8	3.0	9.6	3.6	13.2
5024	24	67.2	3.0	19.2	7.2	26.4
5110	110	1415	3.0	88.0	33.0	121.0
5220	220/230	5661	3.0	176.0	66.0	242.0

Dimensions

Fig 1

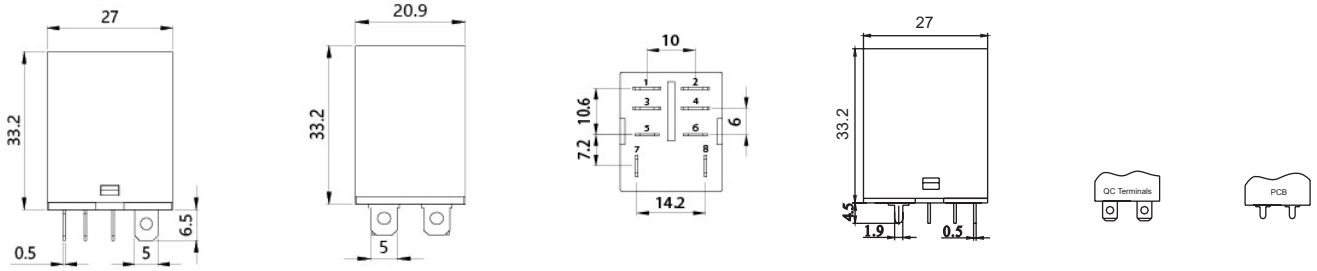
SPDT & DPDT - Chassis Mount



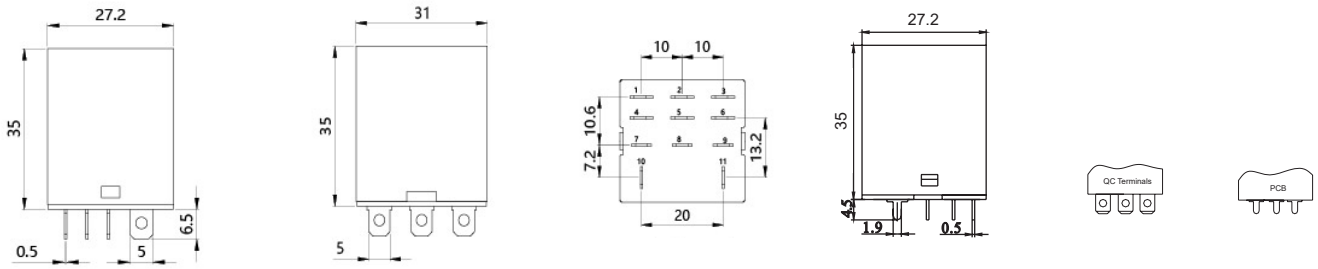
SPST-NO - Plug-in & PCB
Contact terminals 1, 2 not fitted.

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

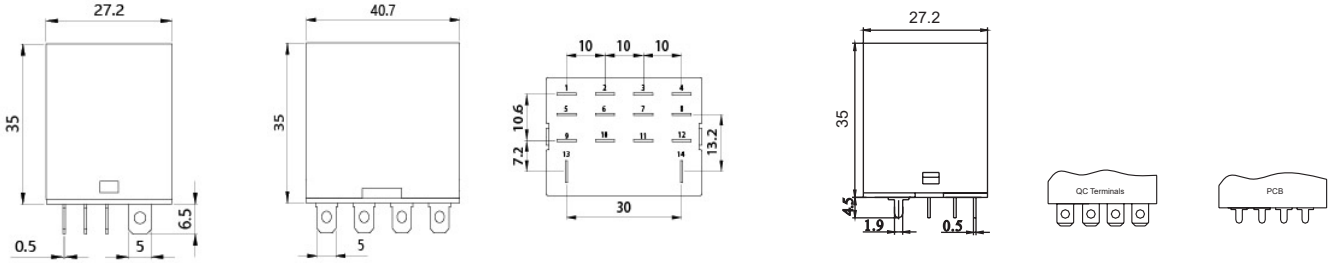
SPDT & DPDT - Plug-in & PCB



3PDT - Plug-in & PCB

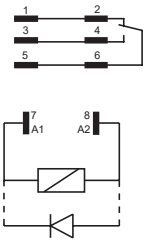


4PDT - Plug-in & PCB

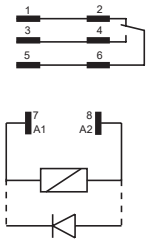


Dimensions in mm

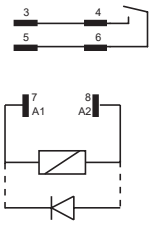
Circuit Diagram



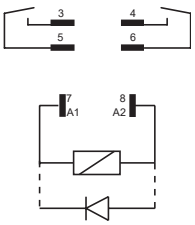
SPDT
Chassis Mount Style



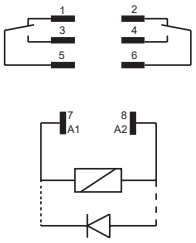
SPDT
Plug-in & PCB Style



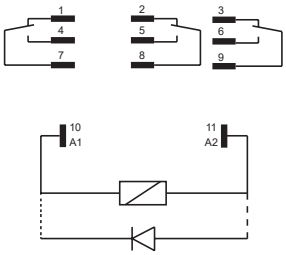
SPST-NO



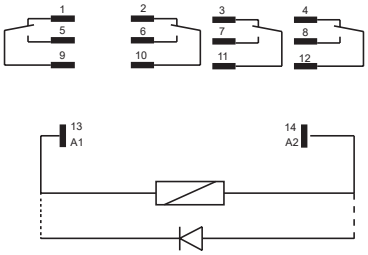
DPST-NO



DPDT



3PDT



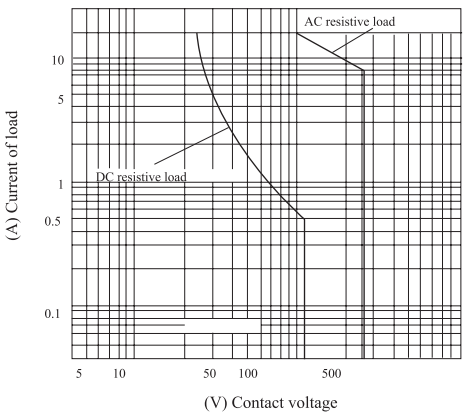
4PDT

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

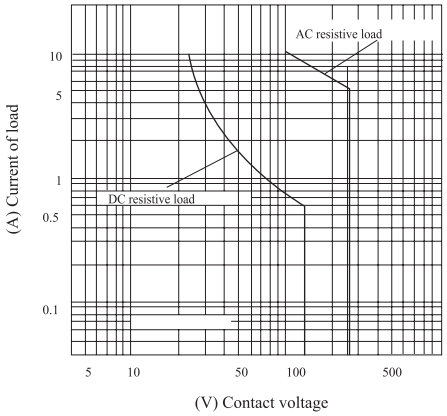
Circuit Diagram

Fig 3

SPDT Max.operating power



DPDT, 3PDT, 4PDT Max.operating power



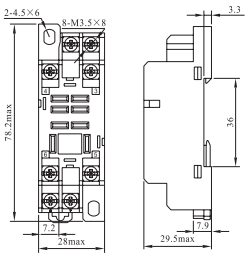
DIN Rail and Chassis Mounting Sockets for DY relays

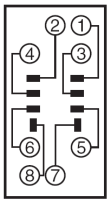
Fig. 4

D13F-2Z-C1

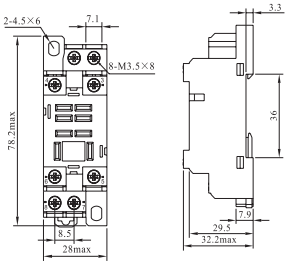
Rated voltage : 250VAC
Rated current : 10A
Insulation voltage : ≥ 3KV
Socket material : PA66-S250F6 (V1/V0)
Contacts spring material : QSn6.5-0.1

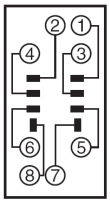
Options:
Steel Hold down spring: JH-006RC





D13F-2Z-C2

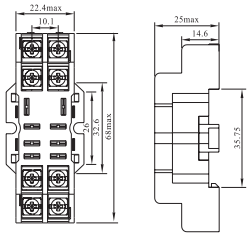


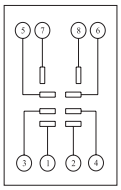


D13F-2Z-C3

Rated voltage : 250VAC
Rated current : 10A
Insulation voltage : ≥ 3KV
Socket material : PA66+GF (V1/V0)
Contacts spring material : QSn6.5-0.1

Options:
Steel Hold down spring: JH-006RC

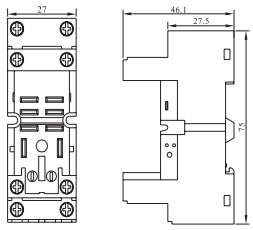


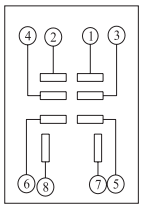


D13F-2Z-C4

Rated voltage : 300VAC
Rated current : 15A
Insulation voltage : ≥ 3KV
Socket material : PA66+GF (V1/V0)
Contacts spring material : QSn6.5-0.1

Options:
Steel Wire Retainer: JH-36MS-B
Plastic Ejector Clip: JH-36PS-A
Plug-in Accessory Modules

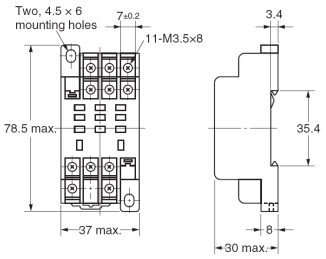


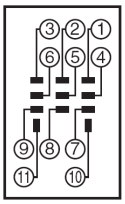


D13F-3Z-C3

Rated voltage : 300VAC
Rated current : 10A
Insulation voltage : ≥ 2.5KV
Socket material : PA66+GF (V1/V0)
Contacts spring material : QSn6.5-0.1

Options:
Steel Hold down spring: JH-006RC

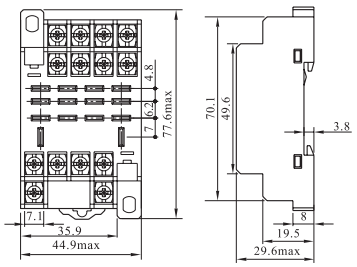


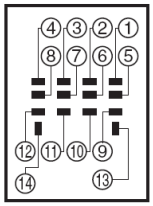


D13F-4Z-C1

Rated voltage : 250VAC
Rated current : 10A
Insulation voltage : ≥ 3KV
Socket material : PA66+GF (V1/V0)
Contacts spring material :
QSn6.5-0.1

Options:
Steel Hold down spring: JH-006RC





Dimensions in mm

Accessories and Miscellaneous Sockets for DY relays

Fig. 5

Plug-in Modules for D13F-2Z-C4

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

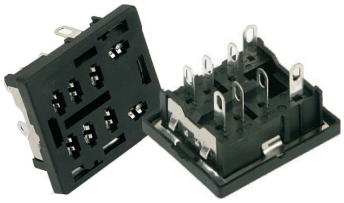
Other modules upon request.

JH-36MS-B Metal Spring Wire Retainer

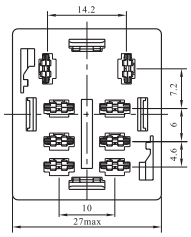
JH-006RC Metal Hold-down Spring (1 pair)

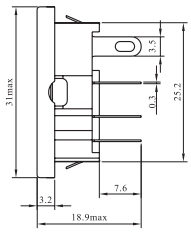
JH-36PS-A Plastic Ejector Clip

D13F-2Z-A



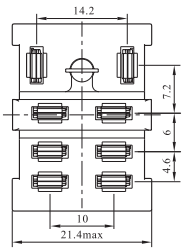
Rated voltage : 250VAC
Rated current : 10A
Insulation voltage : ≥ 3KV
Socket material : PBT (V1/V0)
Contacts spring material : QSn6.5-0.1

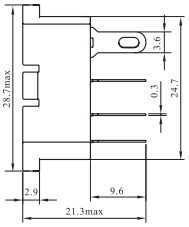




D13F-2Z-A1

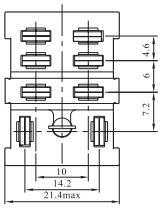
Rated voltage : 250VAC
Rated current : 10A
Insulation voltage : ≥ 3KV
Socket material : PBT (V1/V0)
Contacts spring material : QSn6.5-0.1

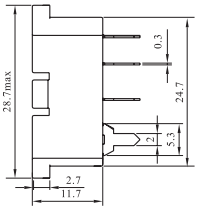




D13F-2Z-A2

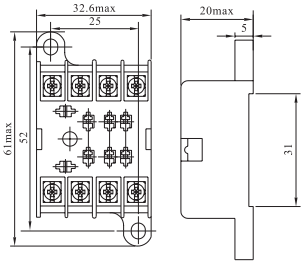
Rated voltage : 250VAC
Rated current : 10A
Insulation voltage : ≥ 3KV
Socket material : PA66-S250F6 (V1/V0)
Contacts spring material : QSn6.5-0.1

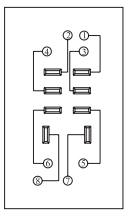




D13F-2Z-2B

Rated voltage : 250VAC
Rated current : 10A
Insulation voltage : ≥ 3KV
Socket material : PBT (V1/V0)
Contacts spring material : QSn6.5-0.1





Dimensions in mm