DG34 Series
Miniature PCB Power Relay


- Up to 40A / 240VAC Continuous rating
- 110VDC Maximum switching voltage
- Industry standard style
- Cost effective

E305753 ROHS Compliant

Contacts

Contact arrangement		SPST-NO (1NO); SPST-NC (1NC); SPDT (1C/O)
Contact material		$AgSnO_2$; AgSnOInO
Max. switching voltage	AC/DC	250VAC, 110VDC
Min. switching current / voltage		500mA / 12VDC
Max. continuous current		SPST-NO: 40A / SPDT: 40A (NO), 30A (NC)
Max. switching current		SPST-NO: 40A / SPDT: 40A (NO), 30A (NC)
Max. switching power		7200VA / 1100W
Initial resistance		≤100mΩ max. at 0.1A/6VDC

Coil

Nominal voltage		3...110VDC; 12...220VAC
Must release voltage		DC ≥ $0.1U_n$: AC ≥ $0.3U_n$
Operating range		See tables 1 & 2
Rated power consumption		0.93W (DC), 1.2VA (AC)

Insulation

Insulation resistance		>100MΩ at 500VDC, 50%RH
Dielectric strength	coil to contact	4000Vrms, 1min (50Hz)
	between open contacts	1500Vrms, 1min (50Hz)
	creepage / clearance - coil to contact	≥ 3mm

General Data

Operating time	typ.	15ms
Release time	typ.	10ms
Electrical life	ops.	1 x 10^5 (1s on / 1s off, 20A 250VAC/30VDC)
Mechanical life (no load)	ops.	1 x 10^6 (300 ops per minute)

Environmental

Ambient temperature	operating	-40 to +125°C
	storage	-40 to +155°C
Shock resistance	functional	20g 11ms
	destructive	100g
Vibration resistance		DA 1.5mm 10-55Hz
Drop resistance		1M height drop on to concrete (sealed type only)
Dimensions	L x W x H	various - see dimensional drawings. (Figs 1 & 4)
Weight	approx.	≤ 36g

Ordering Code

D G 3 4 - 3 0 2 1 - 3 5 - 1 0 1 2

Series

Contact material
- 30: $AgSnO_2$ (40A/30A)
- 70: AgSnOInO

Contact arrangement
- 11: SPDT (1 C/O)
- 21: SPST-NO (1NO)
- 31: SPST-NC (1NC)

Environmental protection
- 1: No cover (open frame) PCB only**
- 3: In cover, sealed - IP67
- 7: Covered, dust cover

Mounting & terminations
- 5: PCB only
- 6: Chassis mounting**, QC terminals for contacts and coil.

** Not available with no cover (Option 1 above)

Coil code:
See tables 1 & 2

Notes:
For AC loads this relay is designed for 50-60Hz standard industrial power and was tested according to AC1 category as defined by the IEC 60947-1 standard, covering low-frequency switchgear (typically 50-60 Hz). Operating at higher frequencies, places the component outside its certified utilisation category, invalidating all safety certifications (CE, UL, etc.) and manufacturer performance guarantees.

Specifications are subject to change without notice. E&OE.

DC Coil Data — Table 1

Coil code	Nominal voltage (VDC)	Coil resistance Ω ±10%	Nominal operating power	Must operate voltage max. (VDC)	Must release voltage min. (VDC)	Max. allowable voltage (VDC)
1003	3	10	0.93W	2.25	0.30	130% of nominal
1005	5	28		3.75	0.50	
1006	6	40		4.50	0.60	
1009	9	90		6.75	0.90	
1012	12	160		9.00	1.20	
1018	18	360		13.50	1.80	
1024	24	640		18.00	2.40	
1048	48	2,560		36.00	4.80	
1110	110	13,445		82.50	11.00	

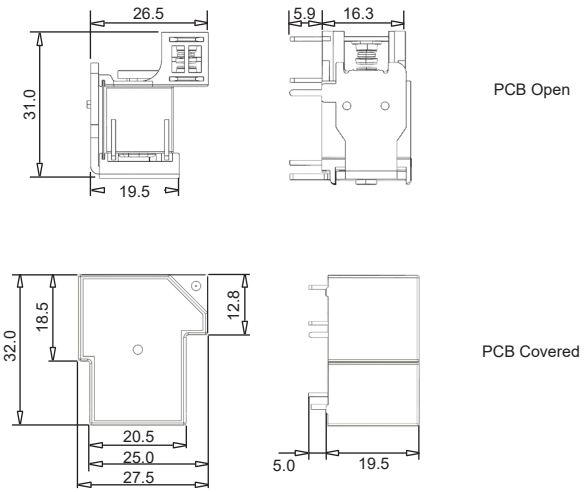
UL Class F Coil insulation standard. (Others to special order)

AC Coil Data — Table 2

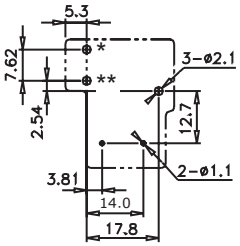
Coil code	Nominal voltage (VAC)	Coil resistance Ω ±10%	Nominal operating power	Must operate voltage max. (VAC)	Must release voltage min. (VAC)	Max. allowable voltage (VAC)
5012	12	27	1.2VA	9.00	3.60	130% of nominal
5024	24	120		18.00	7.20	
5110	110	2,360		82.50	33.00	
5120	120	3,040		90.00	36.00	
5220	220	13,490		165.00	66.00	

UL Class F Coil insulation standard. (Others to special order)

Dimensions mm — Fig. 1

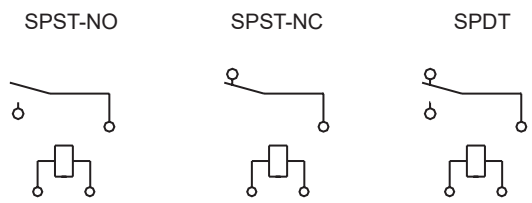


PCB Mounting Dimensions mm — Fig. 2

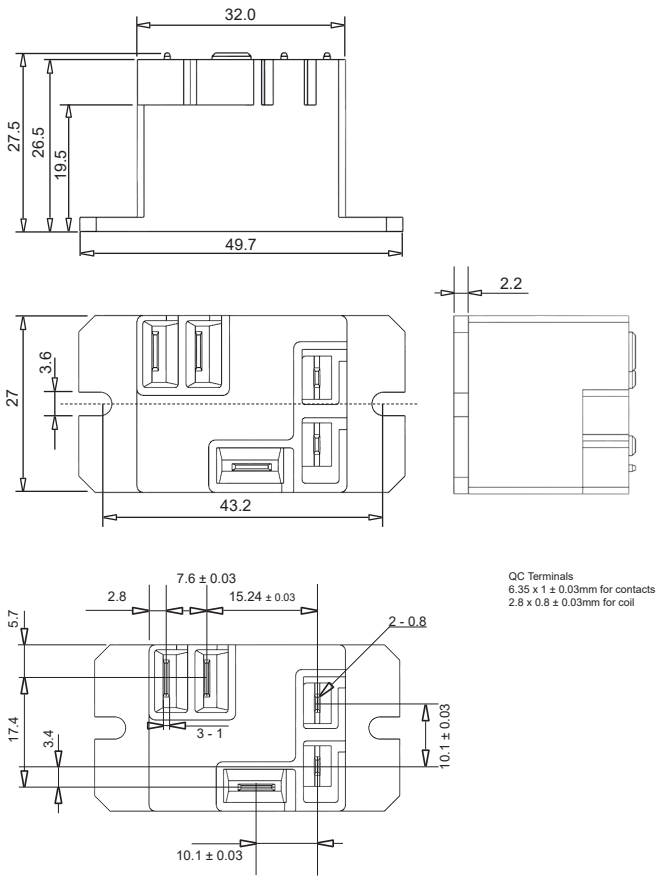


Bottom view (* & ** see note 2)

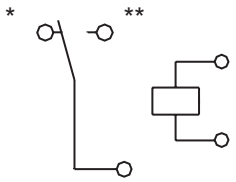
Wiring Diagram - PCB mount relays — Fig. 3



Overall Dimensions mm - chassis mount relays — Fig. 4



Wiring Diagram - chassis mount relays — Fig. 5



* Not fitted for SPST-NO version
** Not fitted for SPST-NC version

Notes:
1) All parameters, unless otherwise specified, are measured at an ambient temperature of 23°C.

2) PCB Mounting Holes - the "*" hole is not needed for the SPST-NO version and the "**" hole is not needed for the SPST-NC version.

3) At an ambient temperature of 85°C, the maximum allowable coil voltage should be reduced to 72%.