



- General purpose automotive or industrial relays
- High inrush capabilities
- PCB Mounting option
- Ideal for DC Motor Control
- Industry standard size and footprint

RoHS
Compliant ✓

Contacts

Contact arrangement	SPST-NO (1 Form A); SPDT (1 Form C)
Contact material	AgNi0.15; AgNi90/10; AgSnOInO
Max. switching voltage	DC 30VDC (current dependent - see fig.3)
Max. continuous current	SPST-NO 40A, SPDT (NO/NC) 40A/30A
Max. switching current ³ (AgSnOInO)	make SPST-NO 120A, SPDT (NO/NC) 120A/45A
Max. switching current	break SPST-NO 40A, SPDT (NO/NC) 40A/30A
Min. switching current (AgNi)	0.1A 12VDC
Contact gap	>0.5mm
Initial resistance	<100mΩ, max. at 0.1A/6VDC

Coil

Nominal voltage	DC 6...24V
Must release voltage	≥0.1Un
Operating range of supply voltage	See table 1
Rated power consumption	DC 1.6W; 1.81W with resistor

Insulation

Insulation resistance	100MΩ at 500VDC, 50%RH	
Dielectric strength	coil to contact	500Vrms, 1min
	open contacts	500Vrms, 1min

General Data

Operating time	typ.	7ms
Release time	typ.	2ms
Electrical life ²	ops.	1 x 10 ⁵
Mechanical life	ops.	1 x 10 ⁷

Environmental

Ambient temperature	operating	-40 to 125°C (Above 85°C - consult factory)
	storage	-40 to +155°C
Shock resistance	functional	20g, 11ms
	destructive	100g
Vibration resistance		DA1.27mm 10-40Hz / 40-70Hz: 5g
		DA0.5mm 100-500Hz: 10g
Dimensions	L x W x H	28.3 x 28.3 x 25.0 mm (excluding terminals)
Weight	approx.	40g depending on mounting

Ordering Code

D G 8 5 A - 7 0 2 1 - 9 6 - 1 0 1 2 - M 1 D R

Series

Contact material

20: AgNi
70: AgSnOInO
80: AgNi0.15 *
* Consult factory

Contact arrangement

11: SPDT (1 C/O, 1 Form C)
21: SPST-NO (1 N/O, 1 Form A)

Coil code:
See table 1

Environmental protection

3: In cover, sealed (IP67)
7: In cover, dust cover (IP54)
9: Cover (IP54) with mounting bracket (integral plastic, unless optional metal bracket selected)

Connection mode

5: for PCB
6: Flat blades
D: Double 87 flat blades (SPST-NO only)

Mounting & terminations

Blank: No options
M1: Metal bracket
M2: Bent metal bracket
S1: Skirted cover & metal bracket
S2: Skirted cover & bent metal bracket

Parallel component options

Blank: No option
R: Integral resistor
D: Integral diode +85/-86
DR: Integral diode reversed -85/+86 -standard

Order code examples

DG85A-7021-75-1012 = unsealed, pcb, no bracket
DG85A-7021-76-1012 = unsealed, no bracket (standard)
DG85A-7021-36-1012 = sealed, no bracket
DG85A-7021-36-1012-M1 = sealed, metal bracket
DG85A-7021-96-1012 = unsealed, plastic bracket
DG85A-7021-96-1012-M1 = unsealed, metal bracket

Coil Data

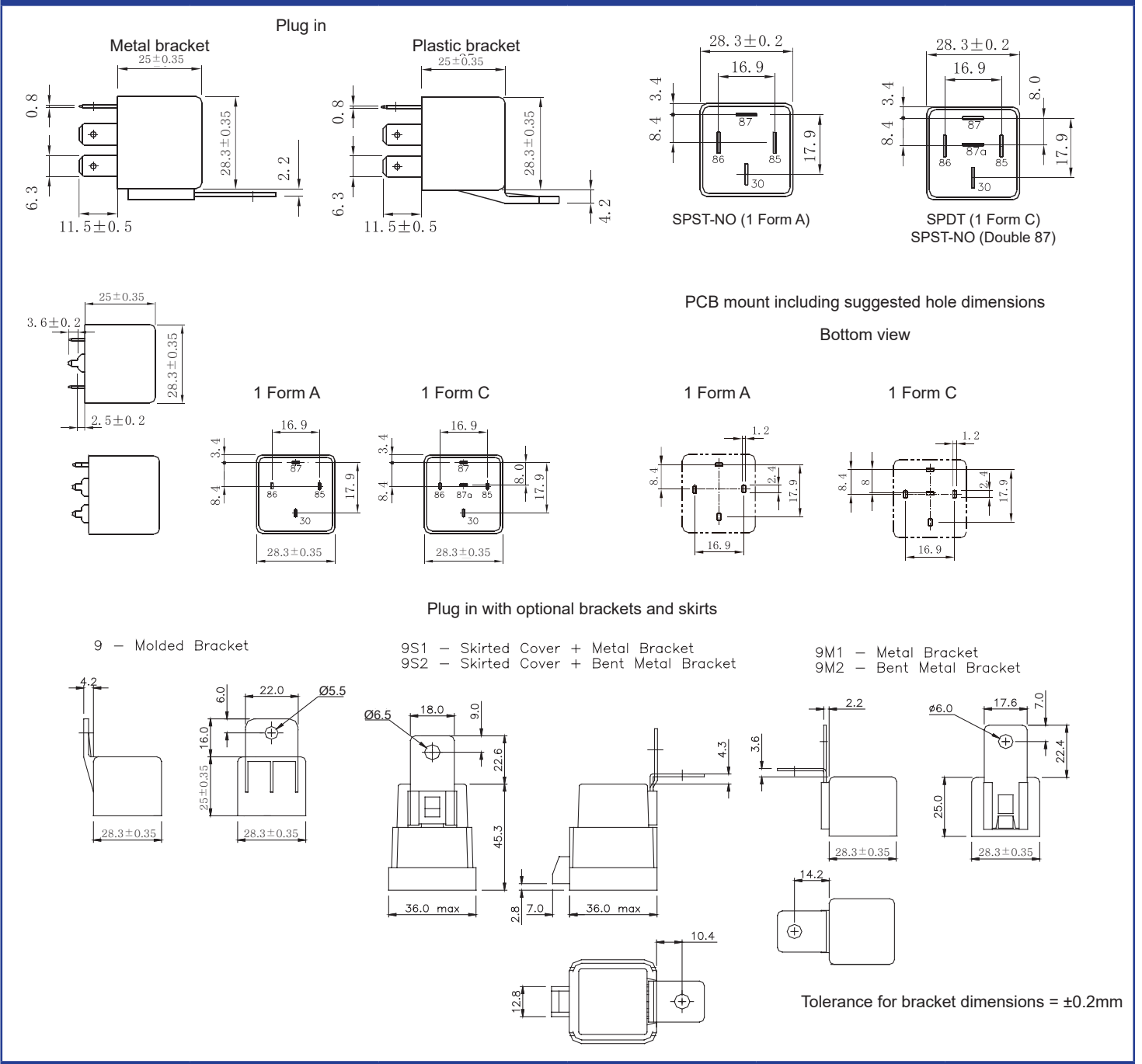
Table 1

Coil code	Nominal voltage (VDC)	Coil resistance Ω $\pm 10\%$	Must operate voltage max. (VDC)	Max. allowable voltage (VDC)*	Must release voltage min. (VDC)
1006	6	22	3.6	10.1	0.6
1012	12	90	7.2	20.5	1.2
1024	24	330	14.4	39.1	2.4

* At ambient temperature of 85°C and above, up to maximum ambient temperature of 125°C, maximum allowable voltage should be reduced by 28%.

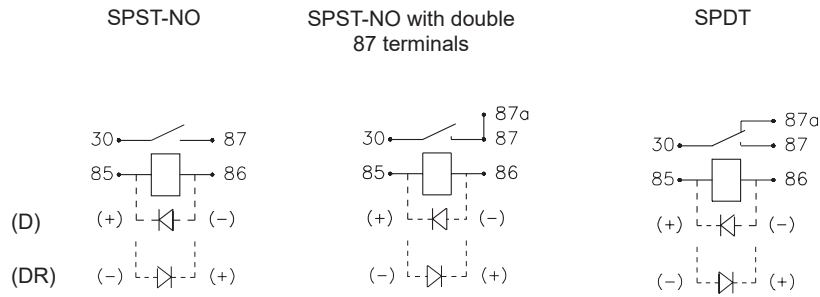
Dimensions mm

Fig. 1



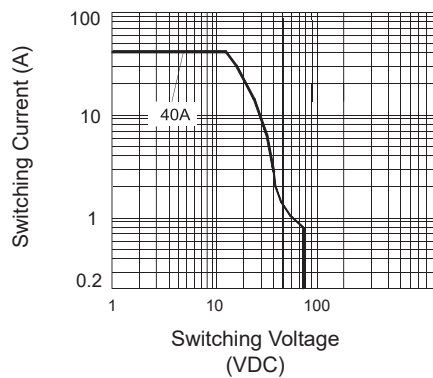
Wiring Diagrams

Fig. 2



Max. DC resistive load breaking capacity

Fig. 3



Notes:

- 1: All parameters, unless otherwise specified, are measured at ambient temperature of 23°C.
- 2: Electrical life obtained at resistive or inductive load at 40A, 15VDC with suitable arc suppression circuit attached and with operating frequency of 1 op/sec.
- 3: Maximum make current refers to lamp load inrush current.