DURAKOOL
A WT/AEC Brand

DG85A Series
automotive / industrial relay



- 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

Rated 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 (Derate 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 - 2 0 2 1 - 9 6 - 1 0 1 2 - M 1 D R

Series

Coil code:
See table 1

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)

Environmental protection
3: In cover, sealed IP67 (not with metal bracket)
7: In cover, dust cover IP54
9: Cover & plastic mounting bracket (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 & bent 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

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

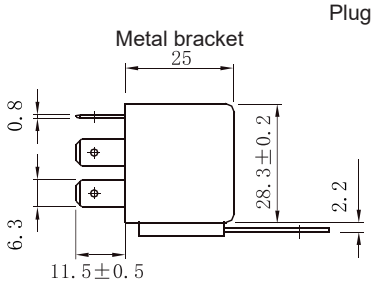
Coil Data — Table 1

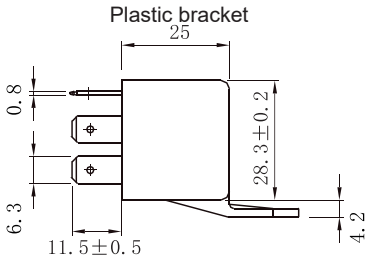
Coil code	Nominal voltage (VDC)	Coil resistance Ω ±10%	Must operate voltage max. (VDC)	Max. allowable voltage (VDC)*	Must release voltage min. (VDC)
1006	6	22	3.6	10.1	0.6
1012	12	90	7.2	20.5	1.2
1024	24	330	14.4	39.1	2.4

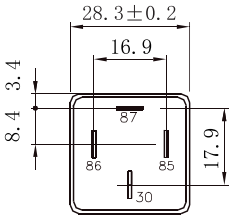
* At ambient temperature of 85°C and above, up to maximum ambient temperature of 125°C, maximum allowable voltage should be reduced by 28%.

Dimensions mm — Fig. 1

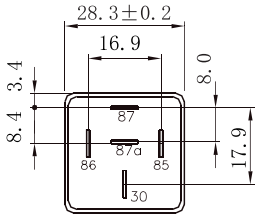
Plug in



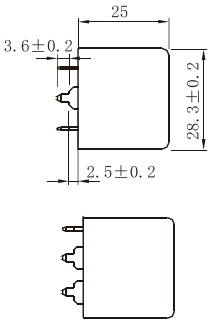




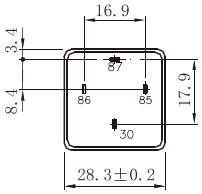
SPST-NO (1 Form A)



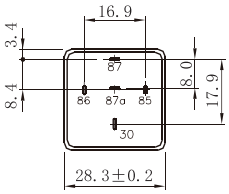
SPDT (1 Form C)
SPST-NO (Double 87)



1 Form A



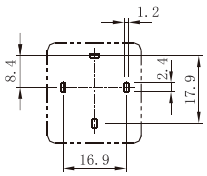
1 Form C



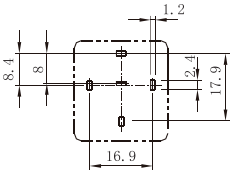
PCB mount including suggested hole dimensions

Bottom view

1 Form A

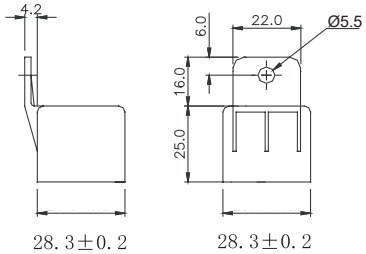


1 Form C

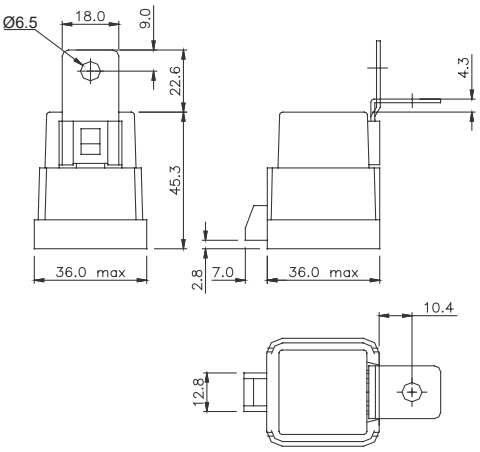


Plug in with optional brackets and skirts

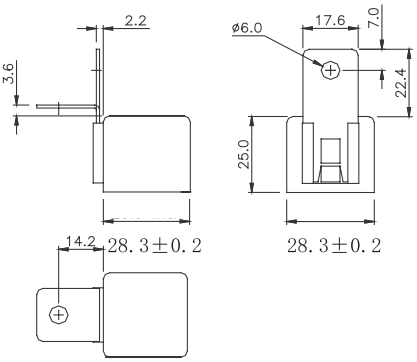
9 – Molded Bracket



9S1 – Skirted Cover + Metal Bracket
9S2 – Skirted Cover + Bent Metal Bracket



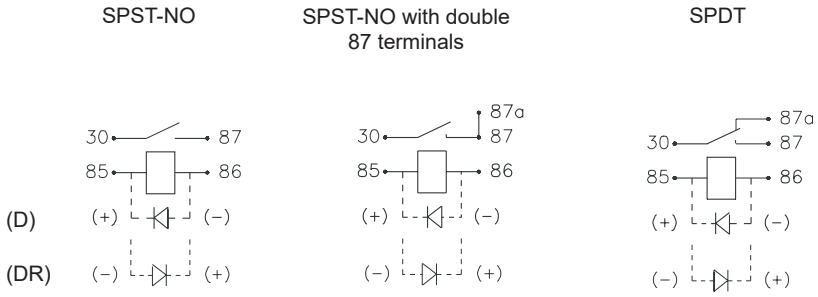
9M1 – Metal Bracket
9M2 – Bent Metal Bracket



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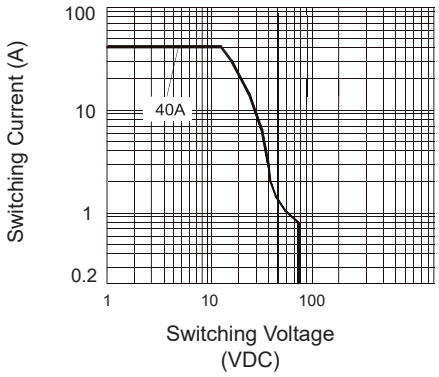
Wiring Diagrams

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.

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