DHVC300 Series
HVDC Contactor 500A / 1000VDC

- 300A Continuous
- Max. breaking current = 2000A
- Magnet arc blowout
- Non-polarised contacts
- Optional auxiliary contact
- Male or female power terminals
- Side or bottom mount
- PWM or twin coil economiser

UK CA CE cULus E305753 RoHS Compliant

Contacts

Contact arrangement		SPST-NO-DM
Contact material		Oxygen Free Copper (Cu. C10200)
Max. switching voltage	DC	1000VDC (current dependent - see fig. 1)
Rated load (resistive, cos φ=1)	DC1	300A
	60 mins	450A
	20 mins	600A
	30 secs	1000A
Max continuous thermal current	DC1	500A with 300mm², or larger, conductors
Max switching current	1 time only	2000A @ 320VDC
Terminal temperature rise above ambient		<70°C. IEC EN60947 GB14/14048.4
Contact voltage drop	max.	120mV @ 300A
Auxiliary contact (when fitted)	arrangement	SPST-NO (1 Form A)
	max. current	2A @ 24VDC / 3A @ 125VAC
	min. current	100mA @ 8V

Coil

Nominal voltage	DC	12VDC, 24VDC, 9 ~ 36VDC, - see Tables 1 & 2
Rated power consumption	hold	PWM: 2W / Twin Coil: 6W approx.

Insulation

Insulation resistance	initial	>100MΩ @1000VDC
	life end	50MΩ (Min.)
Dielectric strength	coil to contact	3000Vrms / <1mA / 1 min (at sea level)
	contact to contact	1500Vrms / <1mA / 1 min (at sea level)

General Data

Operating time at 20°C	max.	30ms
Release time at 20°C	max.	10ms
Bounce time at 20°C	max.	5ms
Electrical life	at rated load	Refer to Fig. 1, Page 2
Mechanical life		3 x 10^5

Environmental

Ambient temperature	operating	-40 to +85°C
Relative humidity		20 to 90%RH
Shock resistance		≤ 20G peak, 11ms 1/2 sine, peak
Vibration resistance		5g (10 ~ 500Hz, peak)
Dimensions		see Figs. 4 & 5 (Page 3)
Weight	approx.	≥450g (will vary according to option)

Ordering Code

D H V C 3 0 0 - 4 0 8 1 - S 8 - 0 9 3 6 - R 1

Series

Contact material
40: Cu. C10200

Contact arrangement
81: SPST-NO
91: SPST-NO + Auxiliary
Contacts are not polarised.

Mounting & terminations
Bottom mount
B8: M8 male stud power terminals
B9: M6 female power terminals
Side mount
S8: M8 male stud power terminals
S9: M6 female power terminals

Coil code:
See Tables 1 & 2

Coil wire & auxiliary wire (when fitted) length
R: 390mm (standard)
T: 150mm
(Other lengths to special order)

Coil wire & auxiliary contact termination
1: None (bare ends)
3: 2 position "Mini-fit" female on coil wires (see Fig. 3)
(Other terminations to special order)

▲ NB: UL ratings may differ and not all variants are UL approved. Contact Durakool for more information.

Coil Data (with PWM economiser) — Table 1

Coil code	Nominal voltage (V DC) U_s	Coil operating range (V DC)	Must operate voltage max. (V DC)	Must release voltage (V DC)	Starting current (A)	Maintain (hold) current (A)
1236	9 ~ 36	9 ~ 36	8 ~ 9	5.5 ~ 7.0	2.4A @ 12V 2.0A @ 24V	0.18 @ 12V 0.09 @ 24V
3295	32 ~ 95	32 ~ 95	29 ~ 31	23 ~ 25	1.3A	0.03 @ 48V

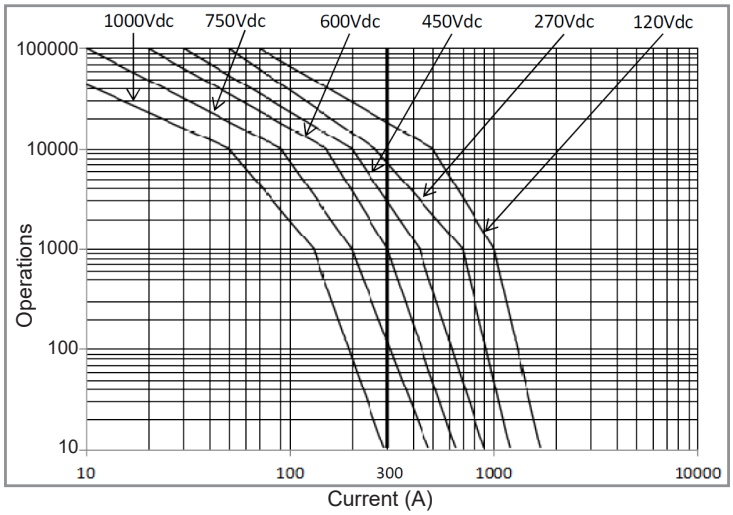
PWM Coil economiser: no additional coil surge suppression required. Coil terminals are polarized.

Coil Data (Twin coil economiser) — Table 2

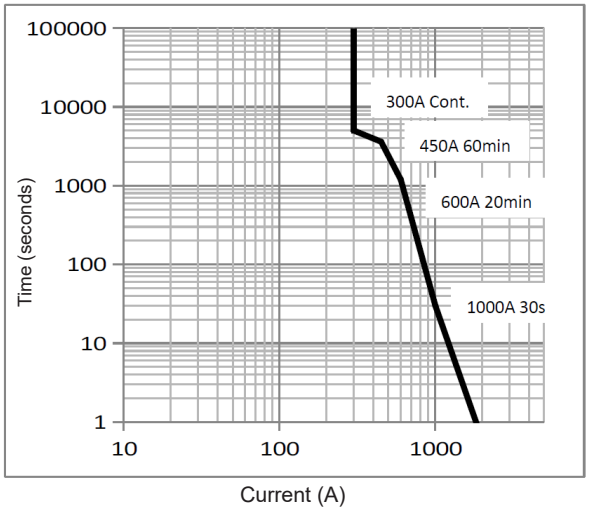
Coil code	Nominal voltage (V DC) U_s	Coil operating range (V DC)	Must operate voltage max. (V DC)	Must release voltage (V DC)	Starting current (A)	Power dissipation (W)
D012	12	9 ~ 16	9.00	1.2	3.8	6
D024	24	18 ~ 32	18.00	2.4	1.9	6

Electrical performance — Fig. 1

Electrical life: Resistive load, non-polarized

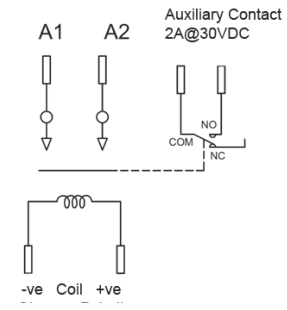


Carry current (A) vs Time (seconds)



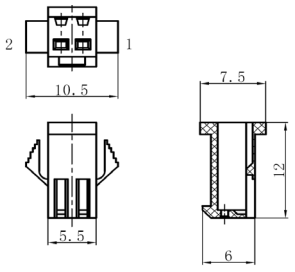
Recommended conductor size of 120mm² and terminal temperature rise maximum in accordance with ISO (EN) 60947.1 70ºC.
Carry current is highly dependent upon conductor size.
Life estimates are based on tests and extrapolated data|.
The user is advised to confirm the performance in their application.

Connection Diagram — Fig. 2



Observe coil polarity.

Optional "Mini-fit" Connector — Fig. 3

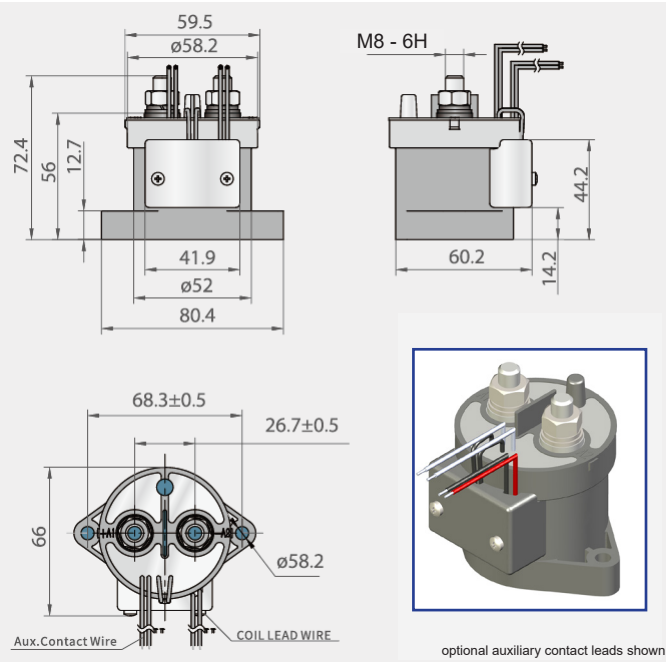


Dimensions in mm

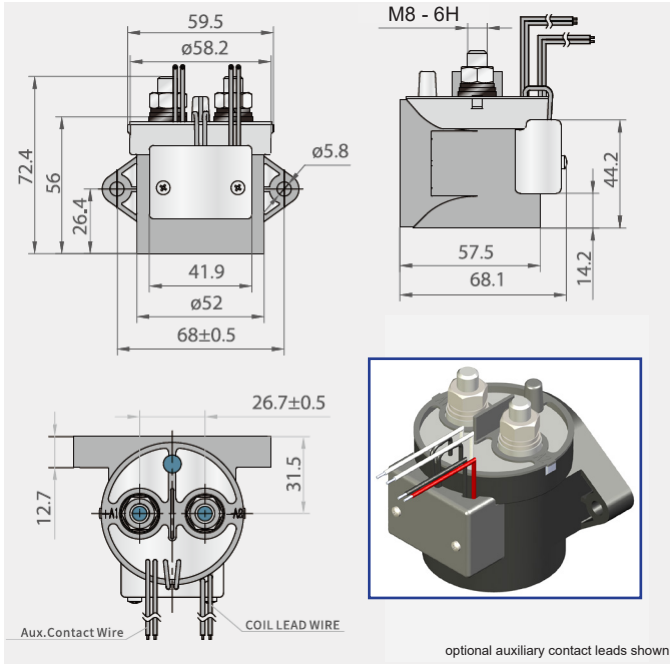
Connector for coil & auxilary contact (x2)
1 = Coil lead terminal +ve (red)
2 = Coil lead terminal -ve (black)
Auxilary contact leads = white
Fitted socket type: SM-2A-HW
Fitted terminal type: SMY-HW

Dimensions - PWM type and Twin Coil are identical. **Fig. 4**

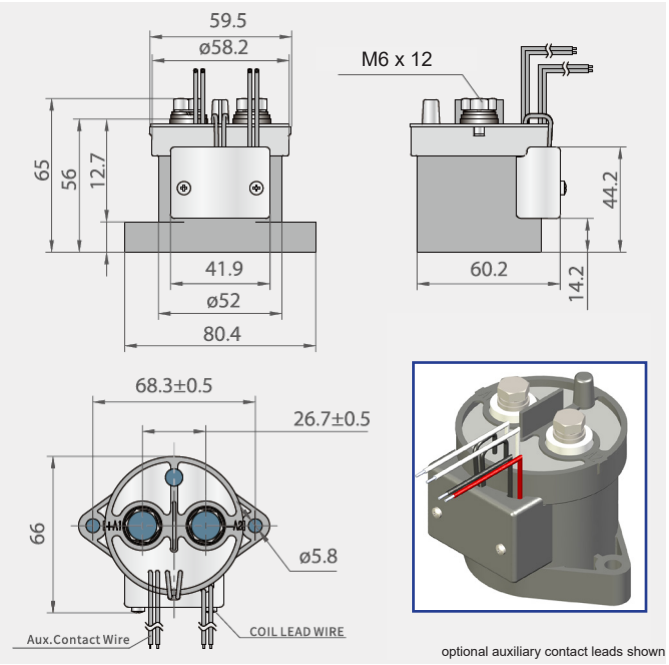
Male terminals - bottom mount case



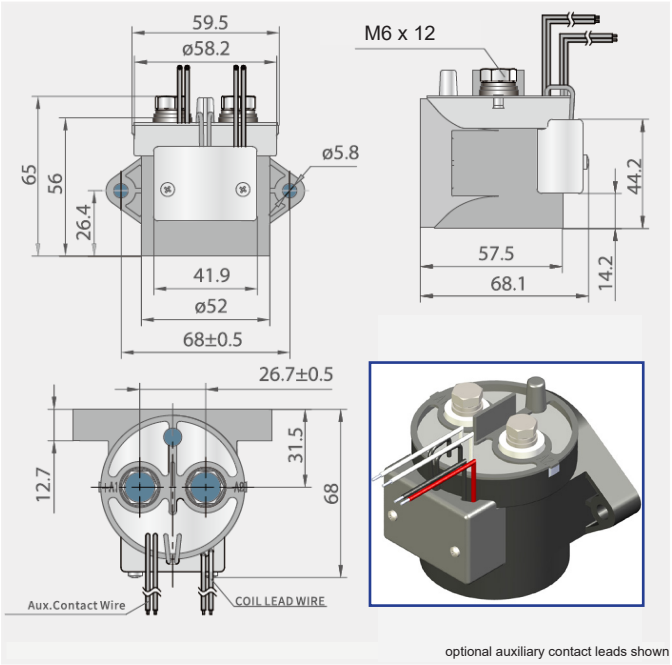
Male terminals - side mount case



Female terminals - bottom mount case



Female terminals - side mount case



Notes:
1: The maximum make current is 300A to avoid contact welding.
2: Nominal dimensions in mm. Tolerances (nominal), <10mm: ± 0.3mm, 10 ~ 50mm: ± 0.6mm, >50mm: ± 1.0mm.
3: Power contact (M8) nut torque = 8 ~ 10Nm, Power Contact (M6) nut torque = 6 ~ 8Nm; Installation/mounting torque = 1.7 ~ 3.5Nm.
4: Coil wire length and terminations can be customised upon request.
5. Coil and auxiliary contact wires: Teflon insulated UL1887 20AWG. Auxiliary Switch wires are white.
6: Main contacts should be connected with cable section of ≥ 300mm², if used at 500A maximum continuous thermal current.
7: The DHVC series has non-polarized contact terminals labeled “A1” and “A2” next to the main terminals. However, the coil terminals are polarized. Please connect the coil’s red wire to the “+” terminal and the black wire to the “-” terminal.