

High Voltage DC Contactor

GLF40



Features

Ceramic seal – Adopts high reliable ceramic seal technology and fill gas with strong cooling ability to quickly switch off the DC load.

Fully sealed – Prevents arc exposure, contacts are in a sealed environment with low and stable contact resistance, can work in harsh environment. Internal protection level of contacts can reach IP67.

Fully RoHS compliant – Better for the environment.

Application fields – BEV, battery charging system, PHEV, charging pile and other.

Contact Data

Contact arrangement	SPST-NO
Working voltage range	12-800VDC
Rated current	40A (Cable 10mm ²)
Current carrying capacity	60A, 120min
	100A, 5min
	200A, 30s
	300A, 5s
	See figure 1
Min. load	1A, 12VDC
Max. switching current	400A, 450VDC, 1 time
Contact resistance (initial)	<5mΩ (at 40A)
Electrical life ¹ (resistive load)	40A, 450VDC, 10000 times (make & break)
	40A, 750VDC, 5000 times (make & break)
	120A, 450VDC, 30 times (make & break)
	-40A, 200VDC, 10000 times (make & break)
	-40A, 750VDC, 5000 times (make & break)
Mechanical life	200,000 cycles

Note 1 Unless specified, all tests are conducted in normal room temperature. Operating frequency: 0.6s on, 5.4s off.

Performance Parameter

Insulation resistance ²	>1000M Ω (1000VDC)
Dielectric strength between open contacts	2500VAC, 1 min (current leakage $\leq$ 1mA)
Dielectric strength between contacts and coil	2500VAC, 1 min (current leakage $\leq$ 1mA)
Operate time (@normal coil voltage, 23°C)	$\leq$ 25ms
Release time (@normal coil voltage, 23°C)	$\leq$ 10ms
Shock - Functional	1/2 sine, 11ms, 196m/s ²
Shock - Destructive	1/2 sine, 6ms, 490m/s ²
Vibration	10-2000 Hz, 57.9m/s ²
Unit weight	Approx. 150g

Note 2 The Insulation resistance is above 50 M Ω after electrical life test.

Operating Conditions

Ambient temperature range	-40°C to +85°C
Humidity	5%RH to 95%RH

Coil Data

Coil serial number	B	C
Coil version	Single coil	Single coil
Rated voltage	12VDC	24VDC
Max. operating voltage	16VDC	32VDC
Pick-up voltage (23°C)	$\leq$ 9VDC	$\leq$ 18VDC
Drop-out voltage (23°C)	$\geq$ 0.6VDC	$\geq$ 1.2VDC
Rated current (23°C)	0.26A	0.13A
Rated power	3.1W	3.1W

Current Carrying Capacity

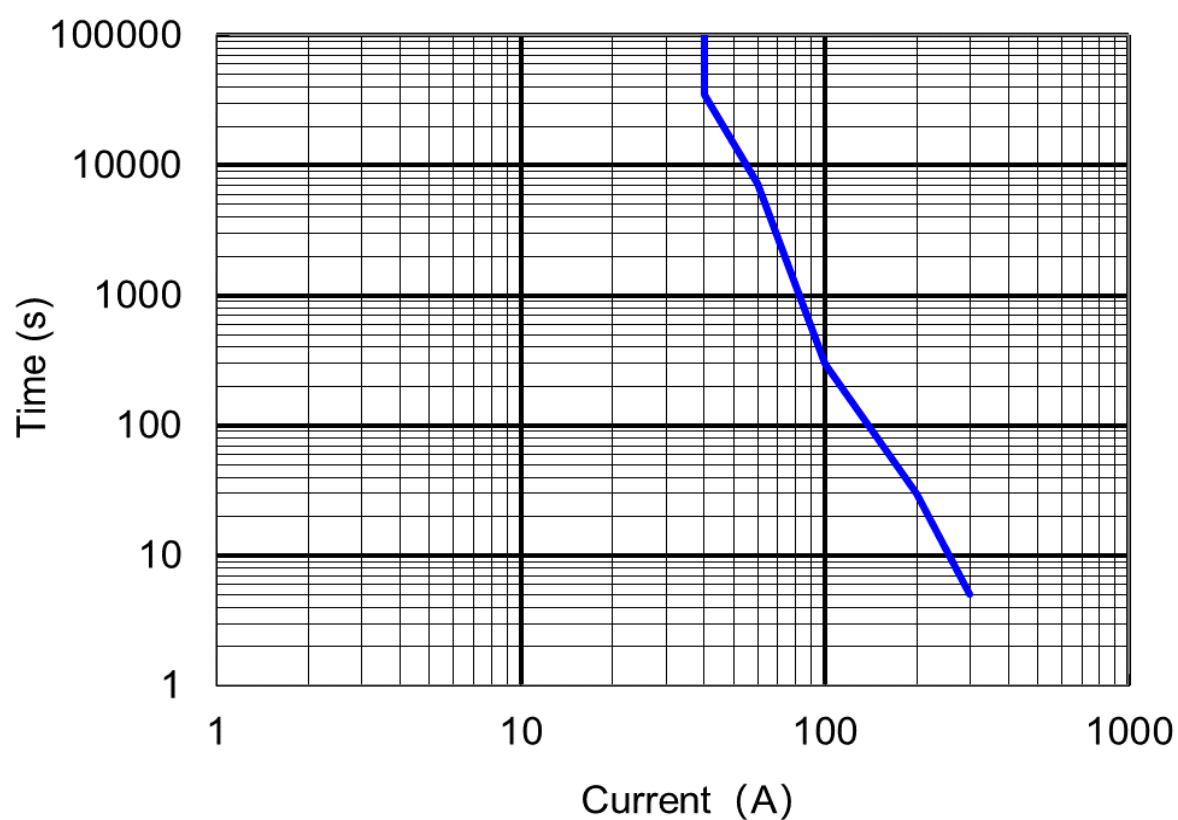
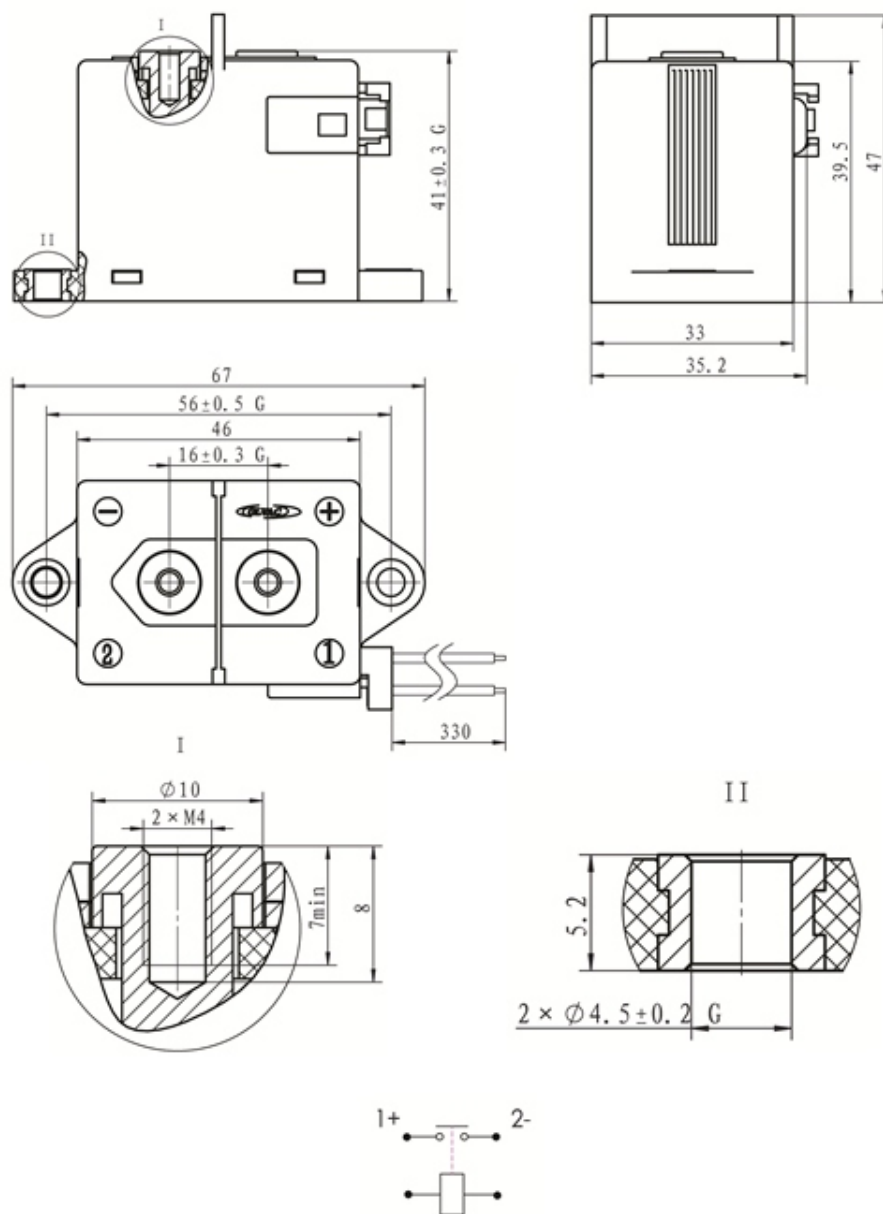


Figure 1 Current carrying capacity

Product Code Structure

GLF40	A	B	XXXXX
Contact form	A: NO		
Coil rated voltage		B: 12 VDC C: 24 VDC	
Customer code			XXXXX

Outline



No polarity distinction on the coil

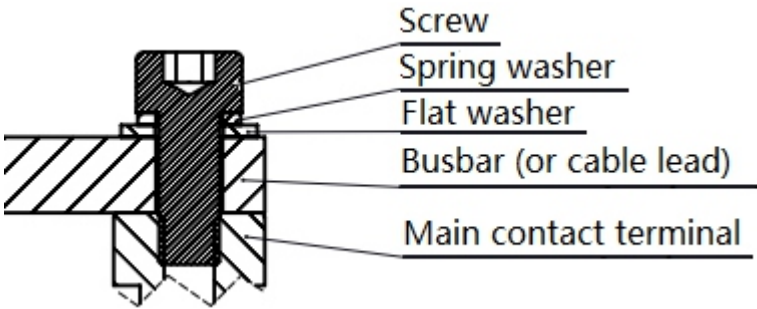
Wiring diagram

Notes:

1. The sizes marked with G are critical.
2. Tolerance
 - <10 mm: ±0.25 mm
 - 10-50 mm: ±0.50 mm
 - >50 mm: ±0.80 mm
3. Product has coil interface socket, mating connector is TE P/N # 1379658-1.
GLVAC will provide the mating connectors with wire lead.
4. Wire lead spec.: AWM3266, 22AWG, black.
5. The M4x8 screws for main contact fixing are supplied by default.

Application Notes

- When contactor is connected with one or more busbars, please ensure that the busbars are tightly fitted to the contact terminal face (when there are multiple busbars, please ensure that the busbar with large current is closest to the contact terminal face, and the busbars with low current come next), then the flat washer, spring washer and screw. Incorrect connection order can cause severe overheating.

Contact type	Connection diagram
Internal thread	 Screw Spring washer Flat washer Busbar (or cable lead) Main contact terminal

- Please avoid foreign bodies, grease or corrosive liquids during installation, otherwise it will lead to abnormal heating at contact terminals.
- Please control the tightening torque during installation within the scope specified in the table below, exceeding the range may cause thread damage. The screws for main contacts are optional accessories. Please refer to the following table for installation information:

Fixing of main contact			Fixing of contactor body	
Screw type	Torque	Depth of thread engagement	Screw type	Torque
M4	2Nm-3Nm	≥6mm	M4	2Nm-3Nm

- There is polarity distinction at main contacts, positive (+) and negative (-), please follow the instruction shown in the wiring diagram. Wrong direction may weaken the break performance.
- There is no polarity distinction at the coil, connection with any current direction can make the contactor move.
- A parallel connection with diode for coil suppression can slow the release time of contactor, which may affect the break performance. Zener diode or TVS (Transient Voltage Suppressor) is recommended for back EMF suppression, but the clamp voltage of it should be 1.5 times large than the coil rated voltage.
- In a capacitive load, please pre-charge the capacitive load to make sure voltage difference less than 20V when contactor pick up. The contactor may have a contact welding without such action.
- In an inductive load, a parallel connection with surge absorber is recommended in the inductive load. It may weaken the break performance if without such protection.
- Please avoid collision or fall in transit or use. To ensure the product performance, please do not use the contactor if there was a collision or fall.
- For 3D drawing, please refer to GLF40 3D-V2.0.
- Please contact GLVAC for more info or support.