High Voltage DC Contactor

GLK20

Product Overview

Low resistance – Low and stable contact resistance, can work in harsh environment.
Small size – Easy to install.
Magnetic blow out – Prevents arc exposure, quickly switch off the DC current load.
Fully RoHS compliant – Better for the environment.
Application fields – Pre-charging, low load level of PTC switch for BEV, PHEV.

Contact Data

Contact arrangement	SPST-NO
Working voltage range	12-800VDC
Rated current	20A (Cable 2.5mm^2)
Current carrying capacity	25A, 120min 30A, 10min 40A, 30s
Min. load	1A, 12VDC
Contact resistance (initial)	<50mΩ (at 20A)
Electrical life[1] (resistive load)	20A, 450VDC, 10000 times (make & break) 30A, 450VDC, 50 times (make & break) 20A, 750VDC, 20000 times (make only)
Working voltage range	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]	>100MΩ (1000VDC)
Dielectric strength between open contacts	2500VAC, 1min, (current leakage≤1mA)
Dielectric strength between contacts and coil	2500VAC, 1min, (current leakage≤1mA)
Operate time (@normal coil voltage, 23℃)	≤50ms
Release time (@normal coil voltage, 23℃)	≤10ms
Shock - Functional	1/2 sine, 11ms, 196m/s²
Shock - Destructive	1/2 sine, 6ms, 490m/s²
Vibration	10-2000 Hz, 27.8m/s²
Unit weight	Approx. 80g

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

Operating Conditions

Ambient temperature range	-40℃ to +85℃
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℃)	≤9VDC	≤18VDC
Drop-out voltage (23℃)	≥0.6VDC	≥1.2VDC
Rated current (23℃)	0.23A	0.12A
Rated power	2.7W	2.7W

Current Carrying Capacity

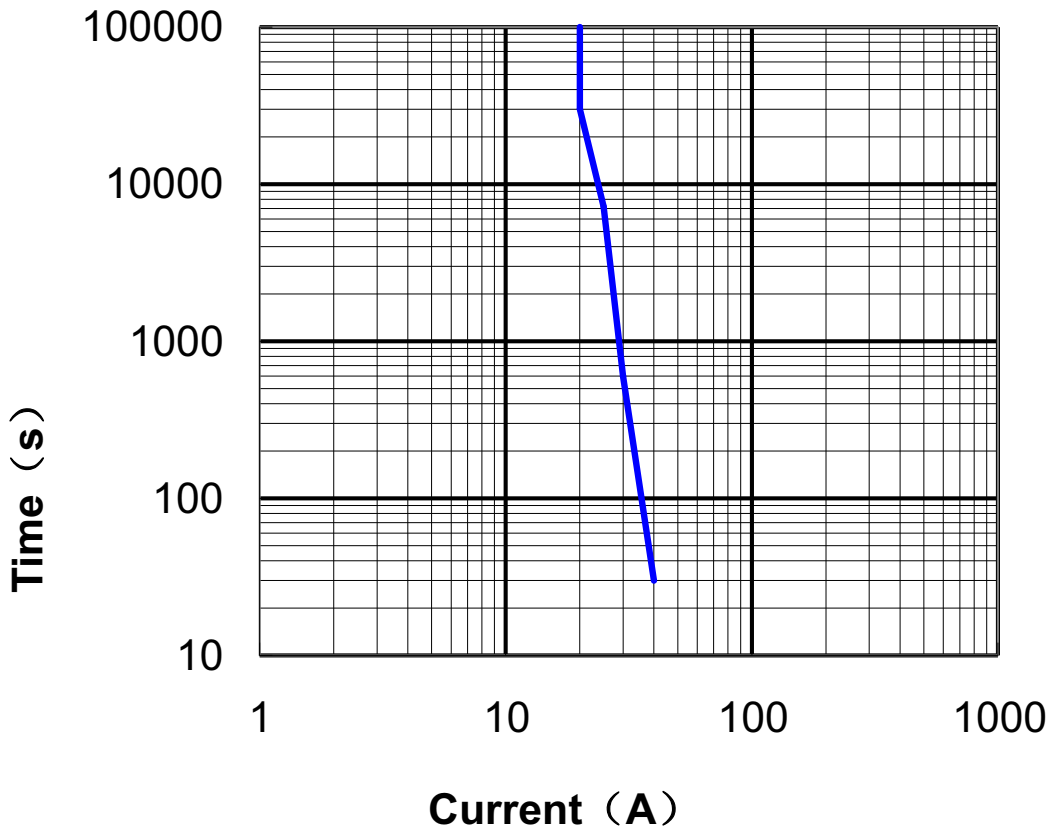
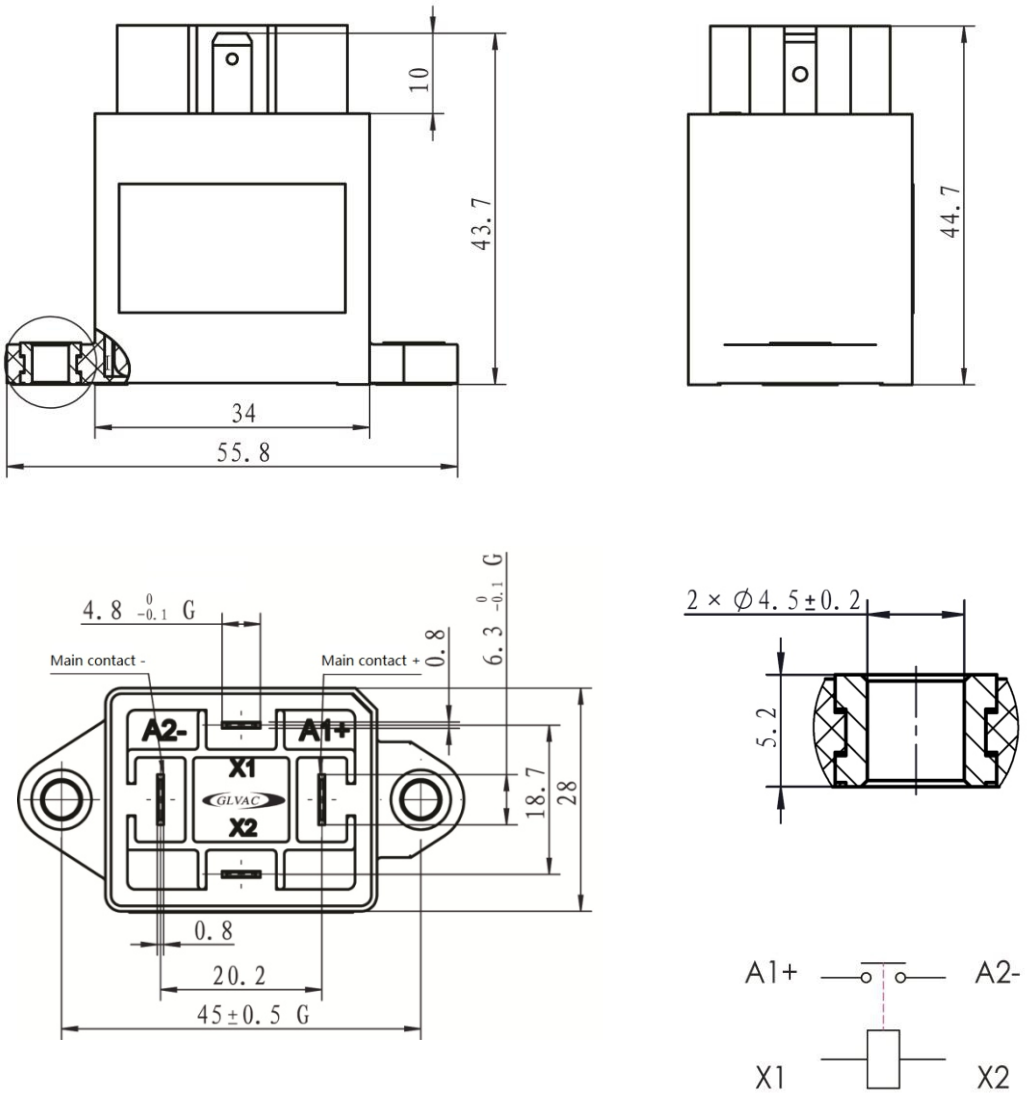


Figure 1 Current carrying capacity

Product Code Structure

GLK20	A	B	XXXXX
Contact form	A: SPST-NO		
Coil rated voltage		B: 12 VDC C: 24 VDC	
Customer code			XXXXX

Outline



Wiring diagram

Notes:

1. The sizes marked with G are critical.
2. Tolerance
   <10 mm: ±0.25 mm
   10~50 mm: ±0.5 mm
   >50 mm: ±0.8 mm
3. Load input terminals (+/-), #250, 0.8mm thickness. Coil input terminals (+/-), #187, 0.8mm thickness.

Application Notes

1. Please avoid foreign bodies, grease or corrosive liquids during installation, otherwise it will lead to abnormal heating on contact terminals.
2. Please control the tightening torque during installation within the scope specified in the table below, exceeding the range may cause case damage. Please refer to the following table for installation information:

Fixing of contactor body	
Screw type	Torque
M4	2Nm-3Nm

3. 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.
4. There is no polarity distinction at the coil, connection with any current direction can make the contactor move.
5. 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 larger than the coil rated voltage.
6. 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.
7. For 3D drawing, please refer to GLK20 3D-V2.0.
8. Please contact GLVAC for more info or support.