

Product feature

- New energy vehicle precharge relay
- Rated 40A contact switching capability
- Normal mounting and 3 flange mounting options are available
- Environmental protection products, meet ROHS requirements

Contact Data

Arrangement		1 Form A
Rated load current		40A
contact resistance		$\leq 5\text{m}\Omega$ (at 1A)
Maximum switching voltage		450VDC
Maximum breaking current		50A (450VDC) 5Times
Maximum switching power		22.5KW
The durability of electricity	Capacitive load	Making 1×10^3 (750VDC, $\tau=1\text{ms}$, impact 200A steady state 40A)
	Impedance load	Switching: 3×10^3 , (40A, 450VDC)
		Making: 1×10^5 , (40A, 450VDC)

Parameter Data

Mechanical durability		5×10^5 Times
Insulation resistance		1000M Ω (500VDC)
Medium pressure	Contact between	2500VAC 1min 10mA
	Contacts and coils	2500VAC 1min 10mA
actuation time (at rated voltage)		$\leq 30\text{ms}$
raleasing time (at rated voltage)		$\leq 10\text{ms}$
Shock	stability	196m/s ² (20G)
	strength	490m/s ² (50G)
vibration		10Hz~500Hz 49m/s ² (5G)
operating ambient temperature		-40°C~85°C
Working environment humidity		5%~85% RH
Weight		Approx 50 g
Length × width × height (mm)		30.1×44×30

current-carrying capability	40A: continuous
	60A: 1h
	80A: 20min
	160A: 30s
	240A: 10s
	400A: 0.6s

Coil Data

Rated voltage (VDC)	12	24	48
Maximum operating voltage (VDC)	18	36	72
Suction voltage (VDC)	≤7.2	≤14.4	≤28.8
Release voltage (VDC)	≥1.2	≥2.4	≥4.8
Release voltage (VDC)	55.4	222	886
Coil power (W)	6	6	6

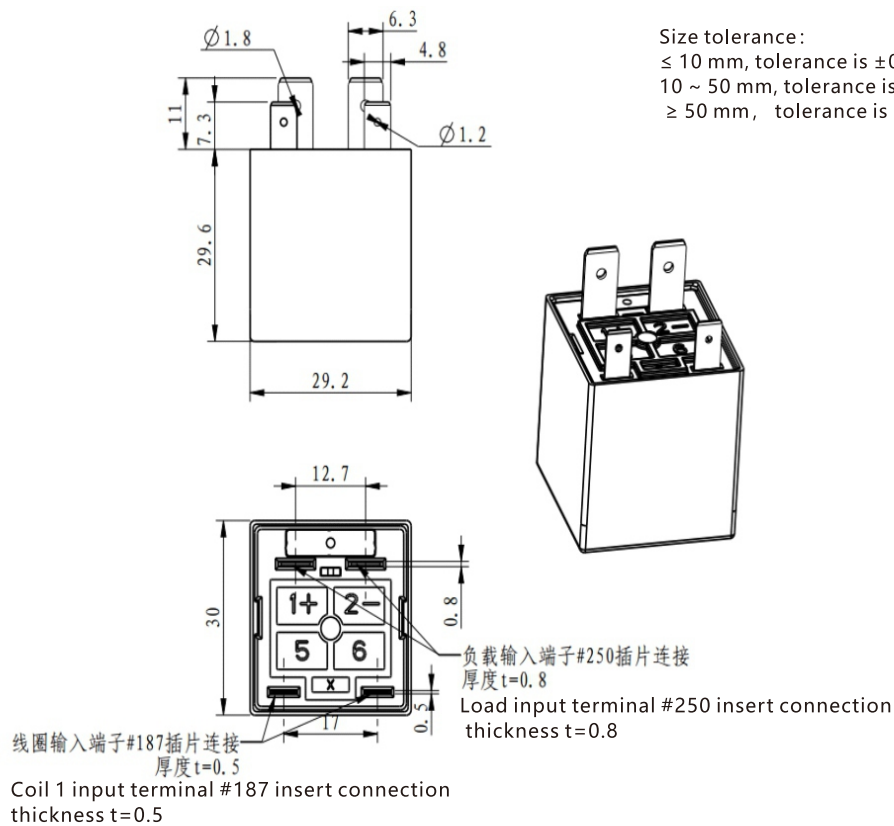
Remarks:

- (1) Unless otherwise indicated, the ambient temperature of the electrical durability test is 23℃, and the on-off ratio is 0.6s: 5.4s
- (2) The ambient temperature is 23℃, and the traverse area is ≥60mm².
- (3) If other rated voltage is required, special order can be made.

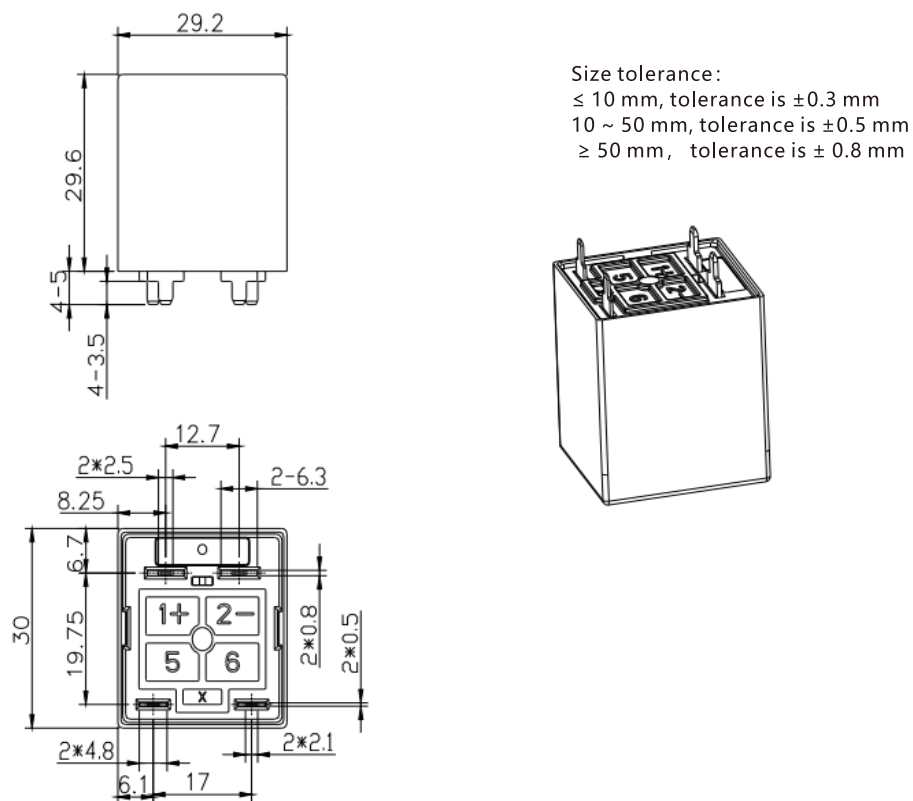
Order tag

Model naming rules									
SEF	40	-	□	M	□	□	□	□	
Customer Feature Number None: There is no special requirement Numbers or letters: customer specific requirements,independent of structure									
Way to install None: Common installation. G, G2,G3: flange installation									
Terminal form None: Fast access terminal P : PCB端子 P: PCB									
The coil voltage 12 : 12VDC、 24 : 24VDC									
Contact group M: 1 set of normally open contacts									
Encapsulated type S: Plastic seal									
Load current 40 : 40A									
The basic model SEF									

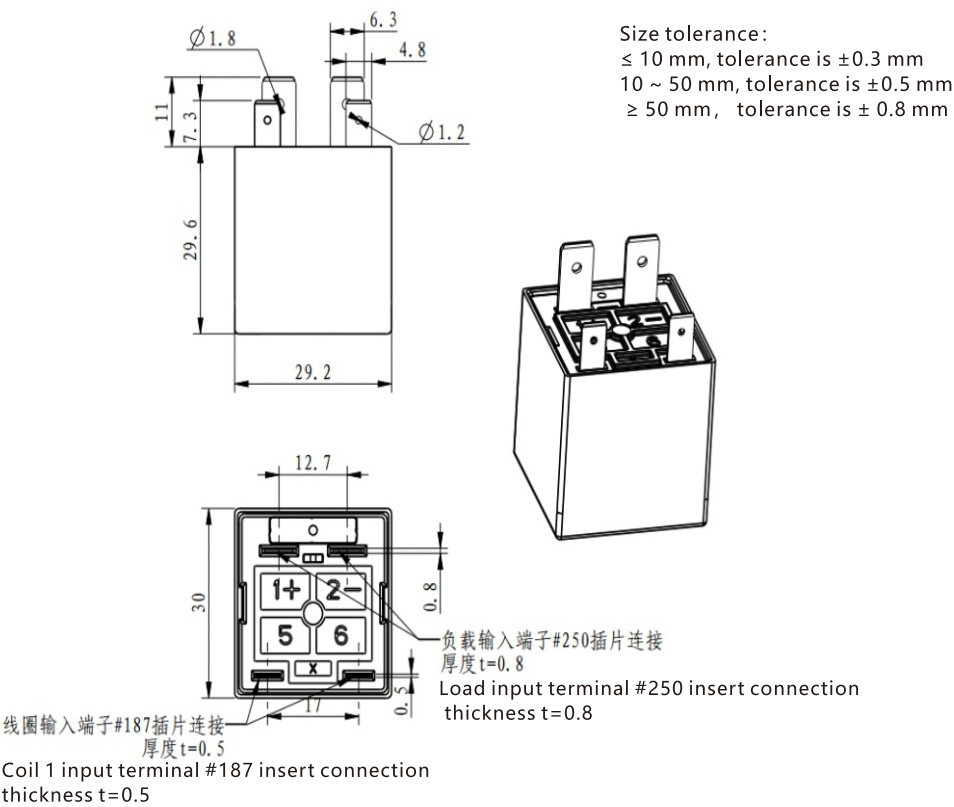
Overall size (quick plug type)



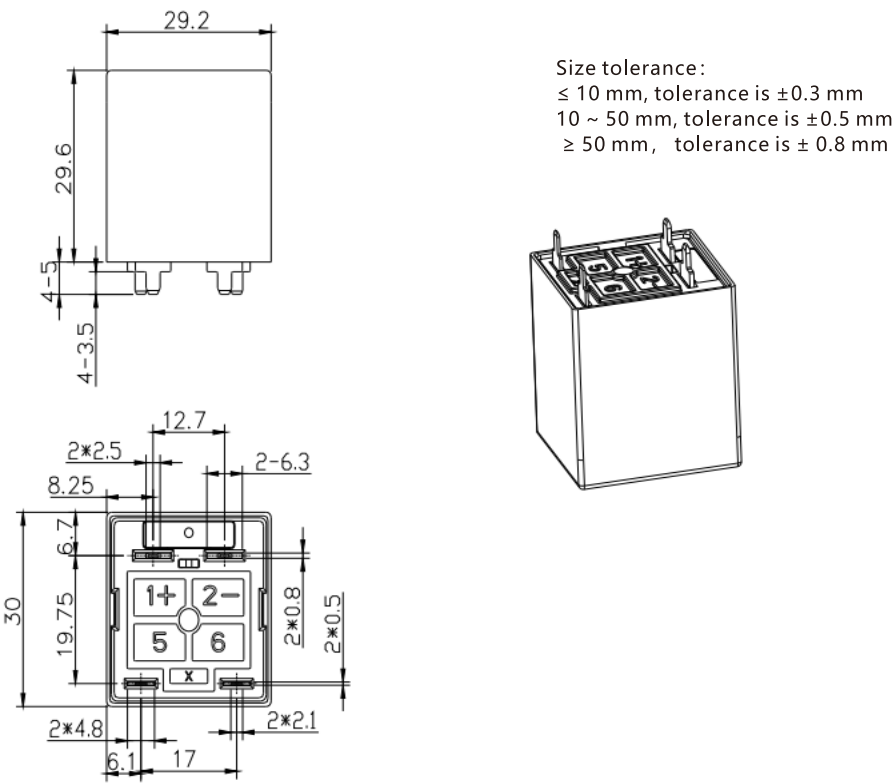
Overall size (PCB)



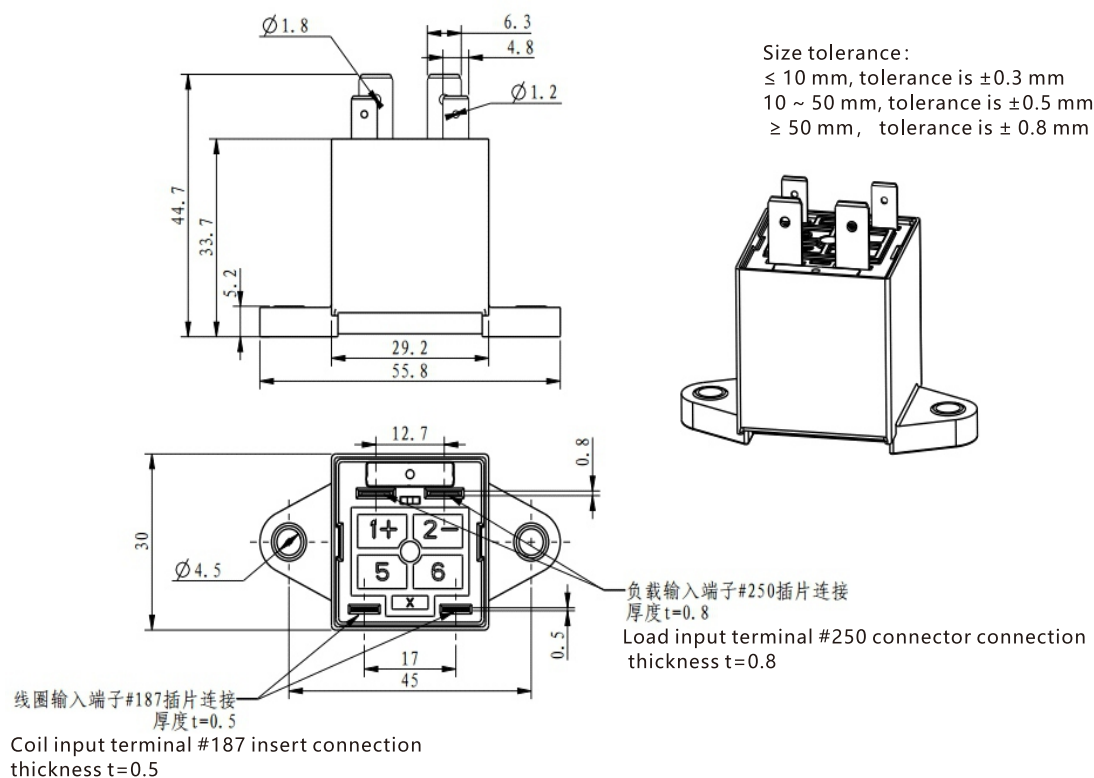
Overall size (quick plug type)



Overall size (PCB)



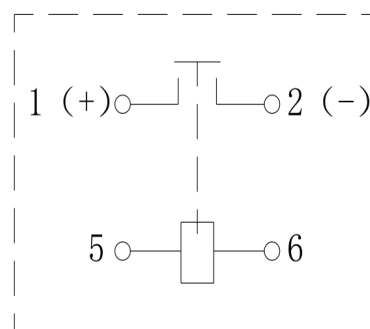
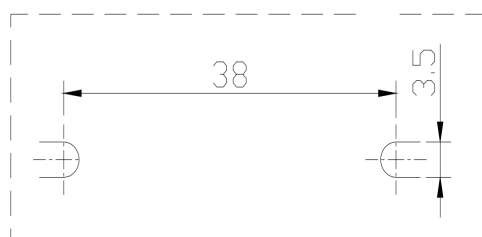
Overall size (TYPE G3)



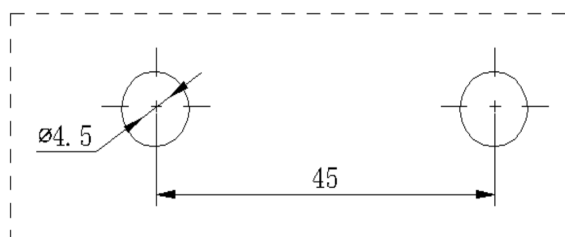
Mounting dimension

Schematic diagram

G mounting dimensions

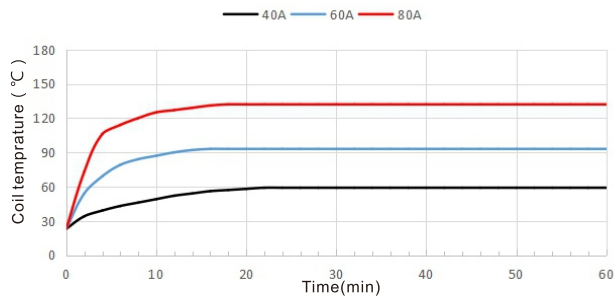


G2, G3 mounting dimensions

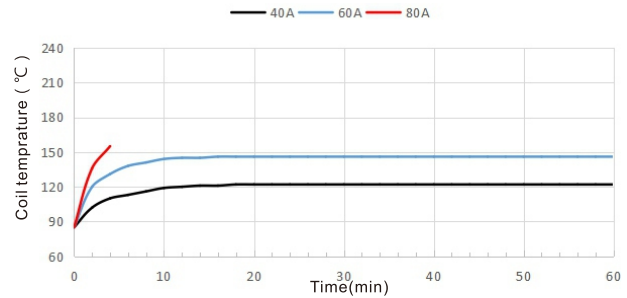


Characteristic Curves

Terminal temperature rise curve
Test items:SEF40-450M12G(2.6W)
Amount:3PCS
Coil voltage:12VDC
Load current:40A,60A,80A
Environment temperature:23°C



Terminal temperature rise curve
Test items:SEF40-450M12G(2.6W)
Amount:3PCS
Coil voltage:12VDC
Load current:40A,60A,80A
Environment temperature:85°C



Description:

● Precautions for relay installation

1. When installing the relay, make sure to use washers to prevent screw loosening;
2. When installing the relay, the torsional torque of the load end of the locking relay and the torsional torque of the mounting hole should be controlled within the recommended range. If the torsional torque exceeds the recommended range, the terminal sliding teeth or the shell may be damaged.
3. Keep away from the strong magnetic field and heat source when installing the relay.

- Matters needing attention in connection of relay load end
1. Please avoid excessive load applied to the product. If it exceeds the rated range, the performance of the product cannot be guaranteed;
 2. Please regard the relay as a product with cut-off life and do not exceed the capacity and service life of the switch. To ensure safety, it should be replaced in time;
 3. The load terminal of the relay is polar, please connect the load according to the polarity requirements marked on the appearance of the product, otherwise the product performance cannot be guaranteed;
 4. If foreign matter or oil is stuck to the load terminal, heat dissipation of the load terminal may be abnormal. Use the following wire or copper bar with nominal cross-sectional area.

10A	公称截面积 (Nominal cross-sectional area)	$\geq 2\text{mm}^2$
20A	公称截面积 (Nominal cross-sectional area)	$\geq 3\text{mm}^2$
40A	公称截面积 (Nominal cross-sectional area)	$\geq 10\text{mm}^2$
60A	公称截面积 (Nominal cross-sectional area)	$\geq 15\text{mm}^2$
100A	公称截面积 (Nominal cross-sectional area)	$\geq 35\text{mm}^2$
150A	公称截面积 (Nominal cross-sectional area)	$\geq 45\text{mm}^2$
250A	公称截面积 (Nominal cross-sectional area)	$\geq 80\text{mm}^2$
300A	公称截面积 (Nominal cross-sectional area)	$\geq 100\text{mm}^2$

- Matters needing attention in connection of relay coil end
 1. When the diode absorbs the reverse voltage of the coil, the release time of the relay will be prolonged and the load switching performance of the relay will decline. Therefore, variable resistance is recommended.
 2. When the relay is in use, considering the ambient temperature and conditions, the action and release voltage of the relay will change, it is recommended to use the rated voltage to supply power to the coil to ensure the normal operation of the relay;
 3. Do not continuously load the maximum voltage on the coil;
 4. For products with energy-saving board (200A and above), it is recommended to use fast rise (step power supply mode) for coil drive;
 5. For products with energy-saving board (200A and above), coil current will be automatically switched after 0.1s. Please do not switch coil voltage repeatedly within 0.1s, otherwise the product performance cannot be guaranteed.

Statement:

This product specification is for reference only, subject to change without prior notice. For Sanyou, it is impossible to assess all the performance requirements of relays in each specific application field, so customers should choose the products that match them according to the specific use conditions. If in doubt, please contact Sanyou for more technical support, but the responsibility of product selection is solely the customer's responsibility.