

Large Power Relay

SET40-Series

Features

- 40A switching capability
- 4KV dielectric between coil and contact
- Strong load capacity
- Have 2 groups of Normal open contacts
- 3mm contacts gap for safty design
- Environment friendly product(Compliant with RoHS)

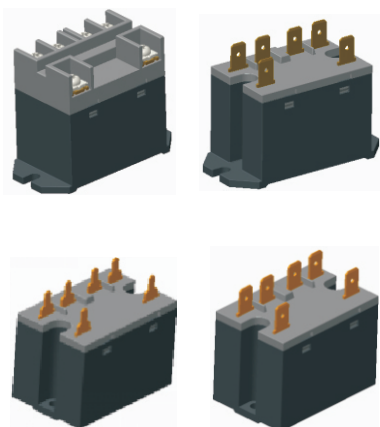
Safety Approval

UL , C-UL File No. : E190598

VDE File No. : 40050829

CCC File No. : 2019010304252538

CE File No. : applying



Contact Capacity

Model	SET40
Nominal switching capacity (res. load)	40A 250VAC
Max. switching current	40A
Max. switching voltage	277VAC
Max. switching power	10,000VA

Characteristic Data

Contact material	Silver alloy	
Initial contact resistance (at 6VDC 1A)	100mΩ Max.	
Operate time (at nominal volt.)	30msec. Max. (DC Type, no diode)	
Release time (at nominal volt.)	30msec. Max. (DC Type, no diode)	
Initial insulation resistance	1,000MΩ Min.(DC500V)	
Initial dielectric strength	Between open contacts :	AC2,000V , 50/60Hz 1min.
	Between coil and contact :	AC4,000V , 50/60Hz 1min.
Vibration resistance	Between contact sets :	AC2,000V , 50/60Hz 1min.
	Functional	10 ~ 55Hz at double amplitude of 1.5 mm
	Destructive	10 ~ 55Hz at double amplitude of 1.5 mm
Shock resistance	Functional	10G Min.
	Destructive	100G Min.
Endurance (operations)	Mechanical (at 10,800 ops./h)	10,000,000 (at room temperature)
	Electrical (at 360 ops./h)	30,000 (at room temperature)
Ambient temperature	-40°C ~ +85°C (no condensation)	
Unit weight	Approx. 130.0 g	

Coil Data (at 20°C)

Nominal voltage (VDC)	Nominal operating current ±10% (mA)	Coil resistance ±10% (Ω)	Max. allowable voltage	Pick-up voltage (Max.)	Drop-out voltage (Min.)	Nominal operating power
3	638.30	4.7	110% of Nominal voltage	80 % of Nominal voltage	10 % of Nominal voltage	Approx. 1.90W
6	319.15	18.8				
12	160.00	75				
24	80.00	300				
48	40.00	1200				
100	19.23	5200				



Nominal voltage (VAC)	Nominal operating current $\pm 10\%$ (mA)	Coil resistance $\pm 10\%$ (Ω)	Max. allowable voltage	Pick-up voltage (Max.)	Drop-out voltage (Min.)	Nominal operating power
6	275.00	18.8	110% of Nominal voltage	80 % of Nominal voltage	10 % of Nominal voltage	1.7~2.5VA
12	138.00	75				
24	74.00	300				
48	39.00	1200				
100/120	18.7/22.1	5200				
220/240	9.7/10.8	20800				

Safety Approval Ratings

(Note: More detail of approval ratings, please refer to the safety certification)

Approval	CCC	CE	VDE	UL/CUL
File No.	2019010304252538	applying	40050829	E190598
Approved ratings	AC-1 I _e =40A U _e =250VAC	40A 250VAC	30A 125/250/277VAC 30A 125/250/277VAC, cos ϕ =0.4	40A 277/250/125VAC, Resistive&General use TV-10, 120VAC 1.5HP, 120VAC 3HP, 240VAC

(1) The above-mentioned unspecified temperature ratings, means that the ambient temperature is room temperature.

(2) Only some typical ratings are listed above. Each rating's test condition is different, so the electrical endurance will be different. If more details are required, please contact us.

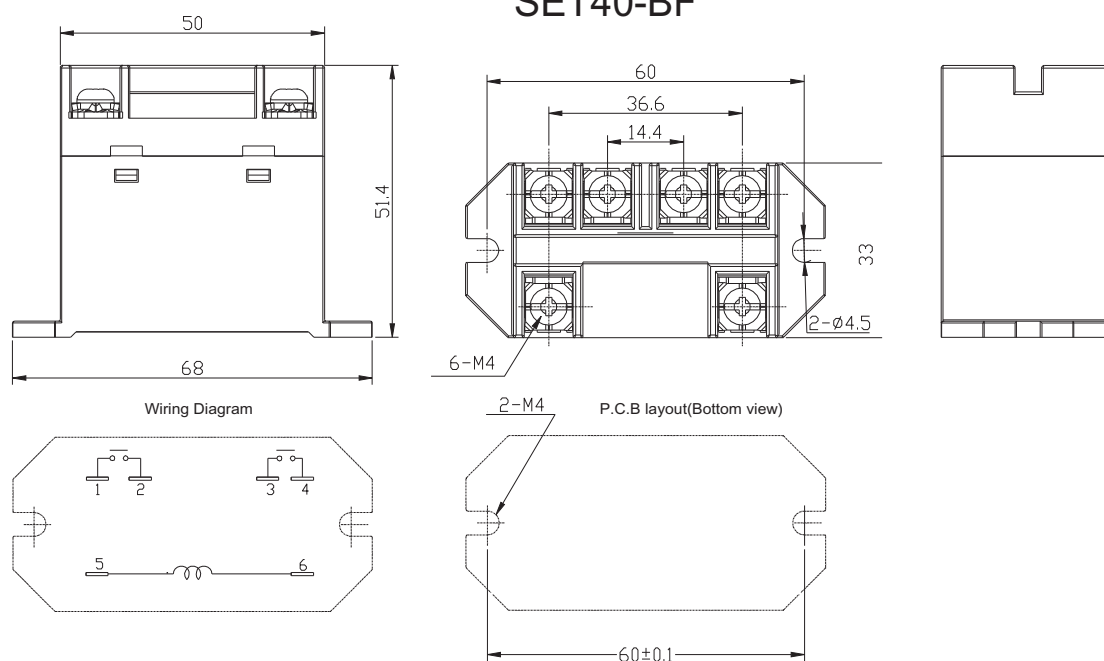
Ordering Information

Nomenclature							
SET40	-	2	12	D	B	☐	F -S -XX
Special Parameter : Nil-Standard type, Letters or Numbers-Special requirements							
Nil-Standard type, S-screw terminal with microswitch + wire S1-screw terminal with microswitch + connector							
Cover Form: F- flange cover, Nil-non-flange cover							
Contact material : Nil-AgSnO ₂							
Terminal Form: B- screw terminal, T- quick connection terminal, P- PCB terminal 1, W-PCB terminal 2							
Coil Power : D-DC coil , A-AC coil							
Coil Voltage (VDC) : 03 , 06 , 12 , 24, 48, 100, 110, 200							
Coil Voltage (VAC) : 06, 12, 24, 48, 120, 220/240							
Number of Poles : 2-2 Pole							
Type Designation : SET40							

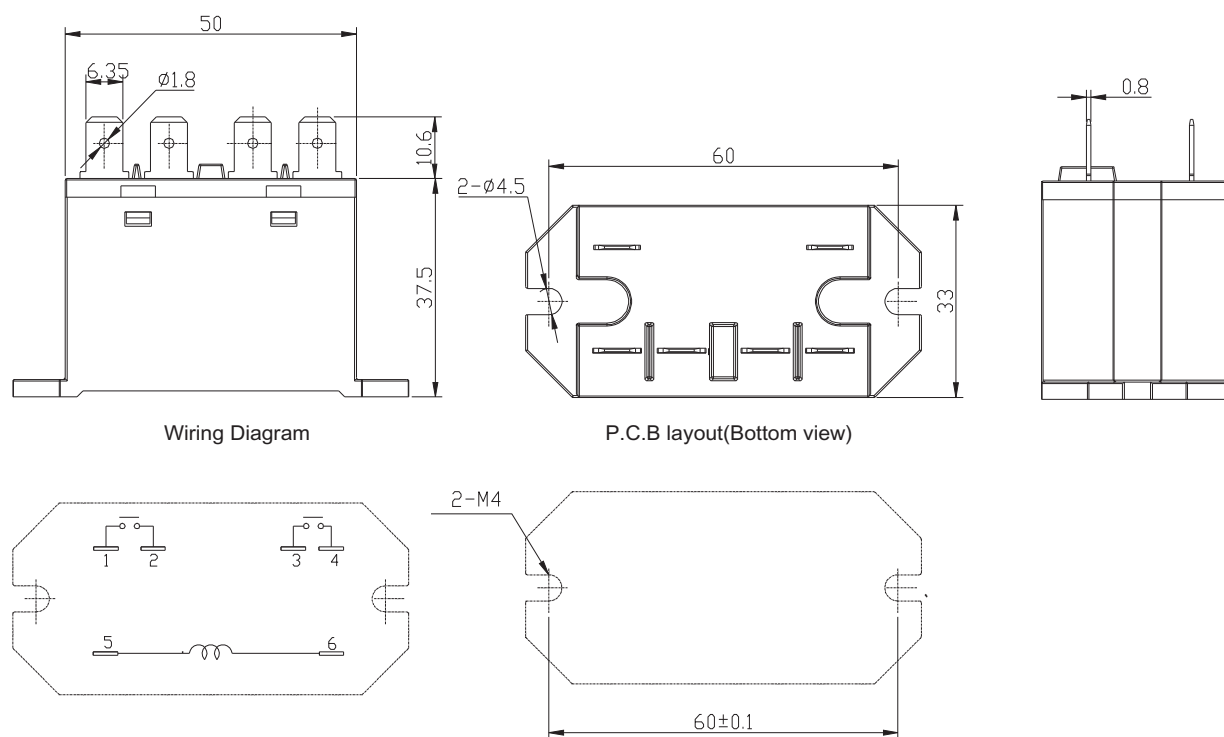


Outline Dimensions, Wiring Diagram, P.C. Board Layout (unit : mm)

SET40-BF



SET40-TF



Unless otherwise specified :

If dimension < 1mm, tolerance : ±0.2mm;

If dimension 1~5mm, tolerance : ±0.3mm;

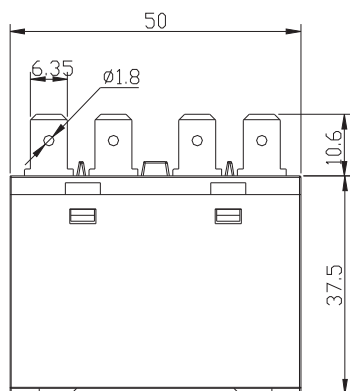
If dimension > 5mm, tolerance : ±0.4mm.

Note : 1. Extended terminal dimension is dimension before soldering.

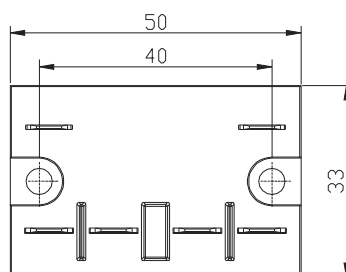
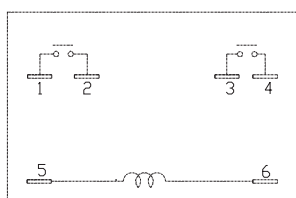
2. Tolerance of P.C.B. layout : ±0.1mm.



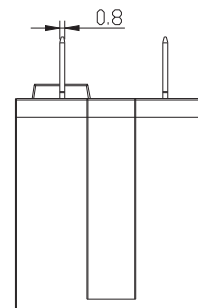
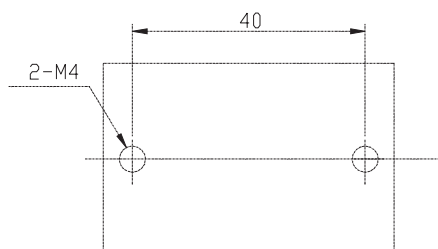
SET40-T



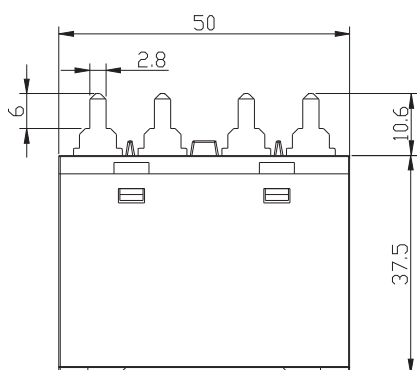
Wiring Diagram



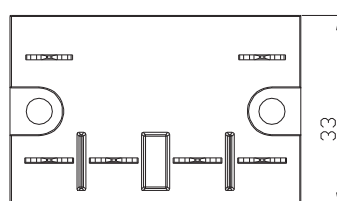
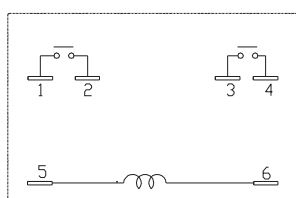
P.C.B layout(Bottom view)



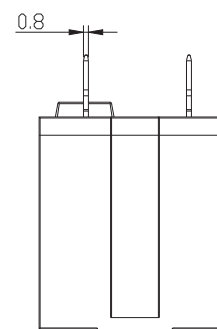
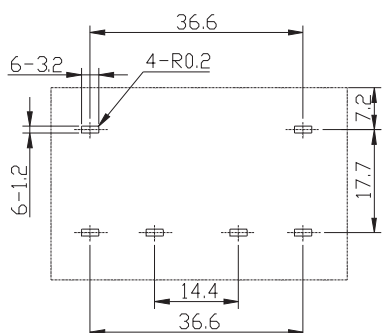
SET40-P



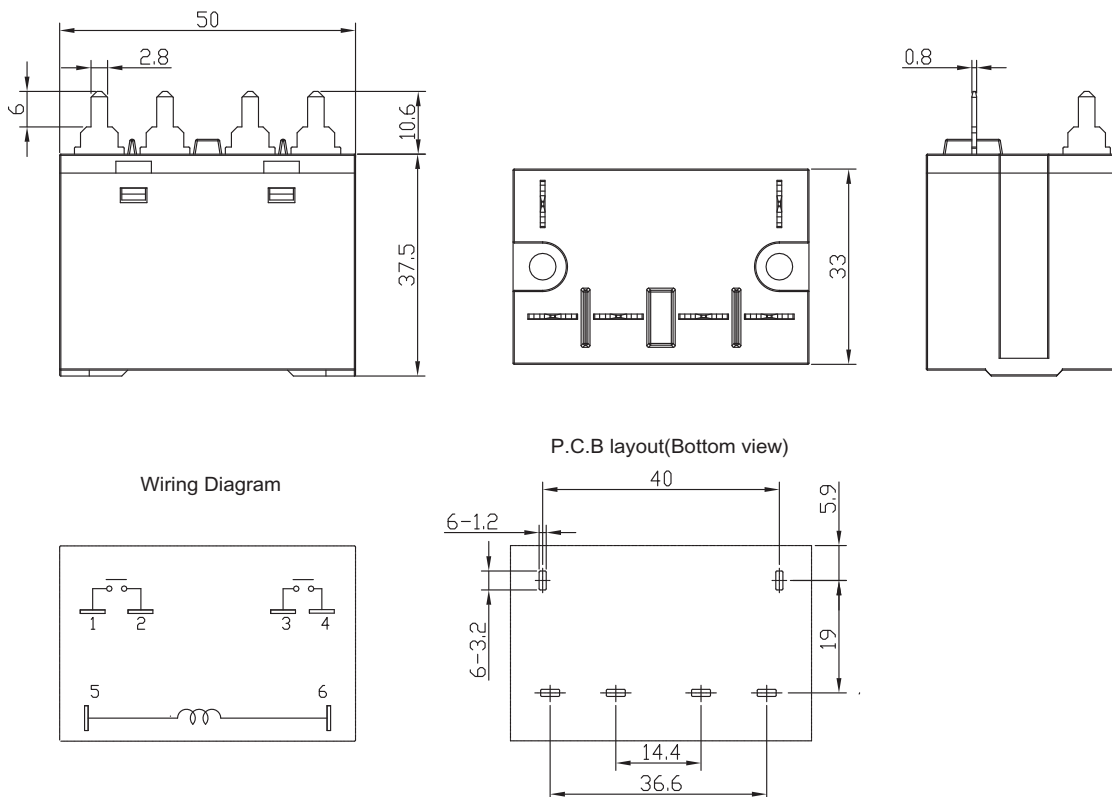
Wiring Diagram



P.C.B layout(Bottom view)



SET40-W

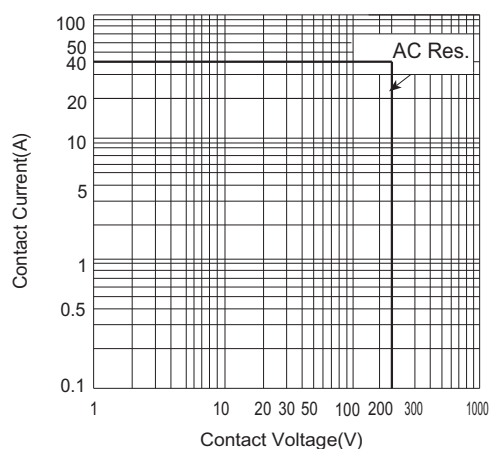


Typical Applications

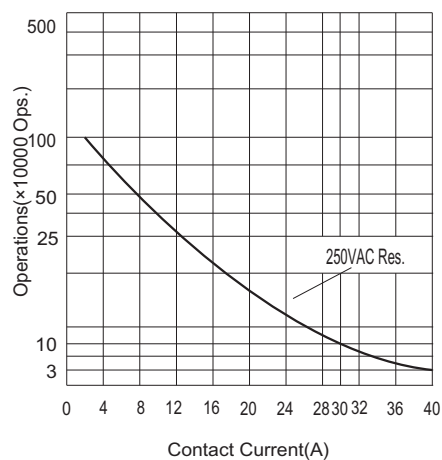
- Especially suitable for Photovoltaic inverter, UPS, charging pile etc

Characteristic Curves

Max. Switching Power



Endurance Curve



Cautions

•Assembly

- Installation at dry and less dust place.
- The PCB terminals' weight is approx. 110g. Pls. mind its strength. In addition, the heat will cause reduction of welding cracks. So pls. use through hole type board.

•Load

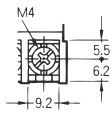
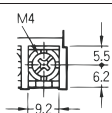
This relay is used for motor, transformer, spiratron, compressor, heater, etc. Pls. don't use for tiny load.

•Soldering

- Manual soldering, pls. avoid automatic soldering.
- It's not sealed structure which can't be washable.

•Connection

- When it's the screw terminals, the terminal space size as reference below.

	Screw terminals
Coil terminals side	
Contacts terminals side	

- Pls. leave room on wire when wiring. Do not put too much force on terminals.
- Fasten torque
Coil terminals: 0.98 N.m
Contacts terminals: 1.37 N.m
- Installation torque
0.98N.m
- Pls. do not put too much force when push and pull plug socket. Also, do it one by one, do not at the same time or at an oblique angle.
- Pls. avoid connecting the QC terminals by soldering.

Note: If use the hole terminal, pls. sure the current is less 30A.

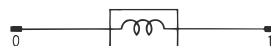
•Reference data

- AC100V as standards if the rated voltage is AC100V~120V.

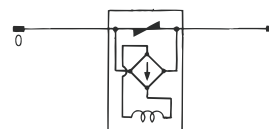
•Coil operation

<Coil inner circuit drawing>

- DC operation coil



- AC operation coil



- When it's driven by transistor, pls. sure the electric leakage, connect the bleeder resistance if necessary.
- There is full-wave rectifier circuit in AC operation coil. If use SSR or bi-directional triode to drive relay which will cause reset NG. Pls. confirm on the actual equipment if it has this situation.

Disclaimer:

This datasheet is the customers' reference. All the specification are subject to change without notice.

We could not evaluate all the performance and all the parameters for every possible application. Thus the user should in a right position to choose the suitable product for their own application. If there is any query, please contact Sanyou for the technical service. However it is the user's responsibility to determine which product should be used only.

