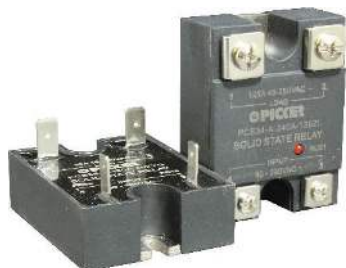


## AC Input Solid State Relay

PCS34 AC Input



### FEATURES

- High Power Solid State Relay
- Back to Back SCR Output
- Load Currents from 40 to 100 Amps
- Dielectric Strength of 4,000 VAC
- Optical Isolation between Input & Output

E93379 



### INPUT PARAMETERS (Ta = 30°C)

Control Voltage Range	90 ~ 280 VAC
Must Turn-On Voltage	90 VAC
Must Turn-Off Voltage	10 VAC

### OUTPUT CURRENT PARAMETERS (Ta = 30°C)

Load Current (200mA min)**	25A	40A	50A	60A	70A	80A	100A	125A
Max Surge Current (10 ms, A <sub>pk</sub> )	300	400	500	600	700	800	1000	1200
Max I <sup>2</sup> t (10 ms, A <sup>2</sup> s)	312	800	1250	1800	2450	3200	3200	3200
Thermal Resistance Junction to Case (R <sub>jc</sub> , °C/W)	0.35	0.25	0.20	0.20	0.14	0.14	0.14	0.13

\*\*Minimum current loading over range required to fully turn on device. Standard UL endurance ratings are 6,000 cycles.

### OUTPUT VOLTAGE PARAMETERS

	240A	480A
Load Voltage Range (VAC)	48~280	48~530
Max Transient Voltage (V <sub>pk</sub> )	600	1200
Max Turn-On Time	20 ms	
Max Turn-Off Time	40 ms	
Max Off-State Leakage Current	10 mA	
Max On-State Voltage Drop	1.7 Vrms	
Min Power Factor	0.5	
Frequency Range	47 Hz to 63 Hz	
Min Off-State (dv/dt)	500 V/us	

### CHARACTERISTICS

Dielectric Strength	2500 VAC, 1 min Input, Output to Base 4000 VAC, 1 min Input to Output
Insulation Resistance	1000MΩ at 500 VDC
Max Capacitance	8pF, Input to Output
Operating Temperature	-30°C to 80°C
Storage Temperature	-30°C to 100°C
Relative Humidity	45% ~ 85%
Weight	88g

### Additional Part Specific UL Ratings

Model PCS34-A-240A-40-XXX	
Load Voltage	Output Current
280VAC 50/60 Hz	50A, 10K cycles, resistive 30°C

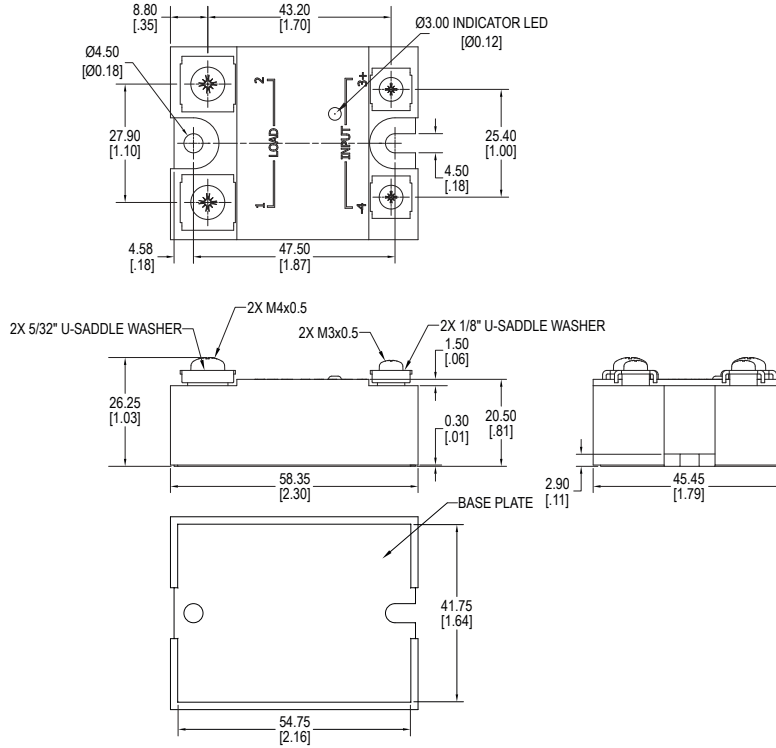
Example	PCS34	-A	-240A	-40	Z		L
Model:	PCS34						
Coil Voltage:	A = 90~280VAC						
Load Voltage:	240A = 48~280VAC 480A = 48~530VAC						
Load Current:	40 = 40A 50 = 50A 60 = 60A 70 = 70A 80 = 80A 100 = 100A						
Switching Type:	Z = Zero Crossing						
Over Voltage Protection:	Nil = None Y = With Varistor (MOV)						
Status LED:	L = Indicator LED						
Terminal Type	Nil = Screw Terminal Q = Quick Connect (3/16" control, 1/4" power)*						

\* only available with 50A and below Load Currents

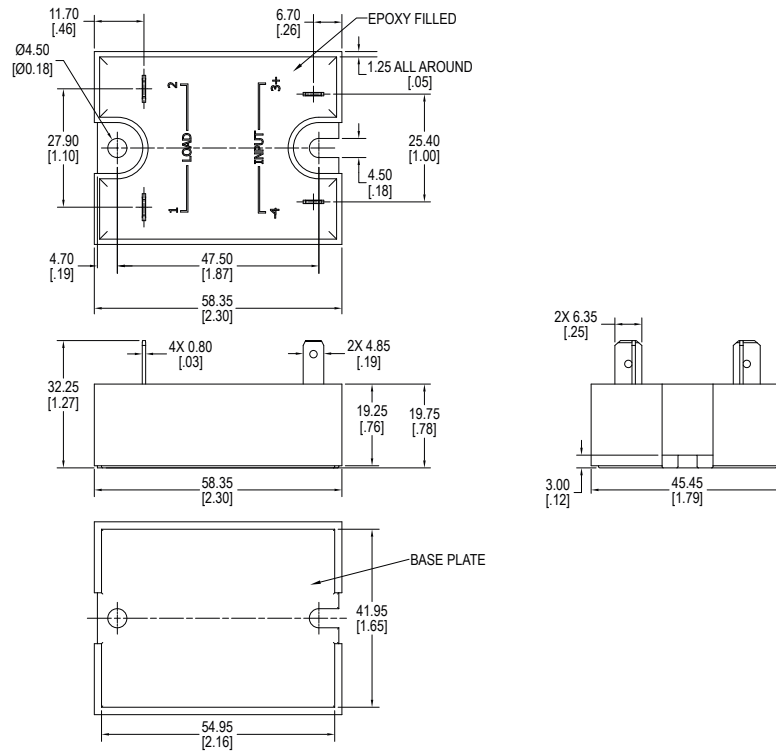
## PRECAUTIONS

1. When choosing a Solid State Relay (SSR), note the actual load current and ambient temperature and reference the Characteristic Curves.
2. SSRs require an adequate heat sinking or other effective cooling measure.
3. With ambient temperature above 25°C, refer to the curve of Max Load Current vs. Ambient Temperature for load current derating.
4. Apply heat-conducting silicon grease or a thermal transfer pad on the space between the SSR and heat sink and screw the SSR firmly to the heat sink to avoid damage from overheating.
5. Tighten the SSR terminal screws properly. We recommend screw installation torque as follows:  
 M4 screw mounting torque range is (0.98~1.37)N \* m  
 M3 screw mounting torque range is (0.56~0.98)N \* m  
 Loose screws will damage the SSR with heat generated from connections. Also, excessive screw torque may damage the relay's internal components.
6. It is recommended to use a heat sink matched to the Current Load. With any heat sink, test that the SSR base temperature does not exceed 65°C.
7. When using the PCS34 relay with an inductive load, it is suggested to select Random Turn-On. (i.e. a model with "R" Switching Type)
8. The PCS34 is not suitable for capacitive loads; if you must, then do not choose products with varistor protection. (i.e. a model with the "Y" Over Voltage Protection)
9. Listed parameters are based on resistive loads. Do not use the relay beyond the described current, temperature, load or voltage limits as described in this datasheet.

DIMENSIONS

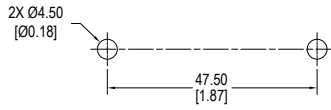


Screw Terminals

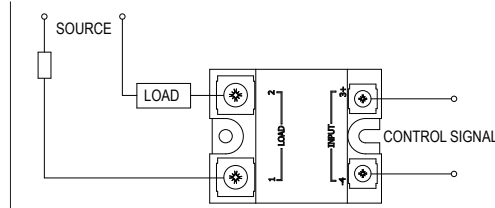


Quick Connect Terminals

DIMENSIONS — Continued



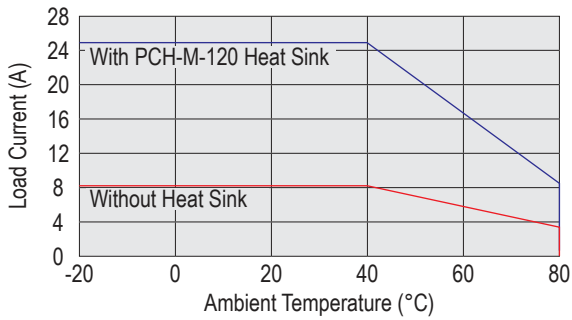
Mounting Layout



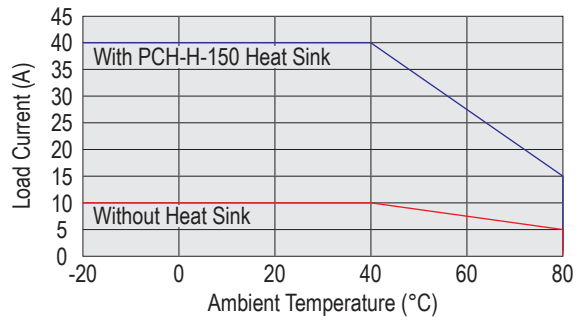
Wiring Diagram

CHARACTERISTIC CURVES

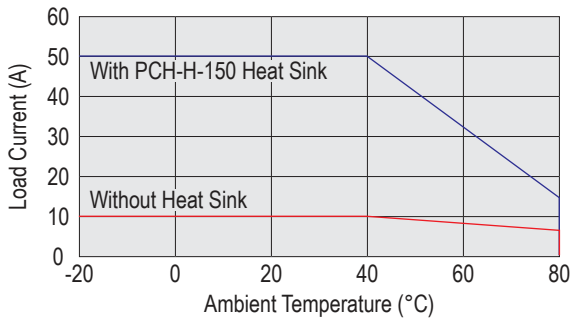
Max Load Current vs. Ambient Temperature (25A)



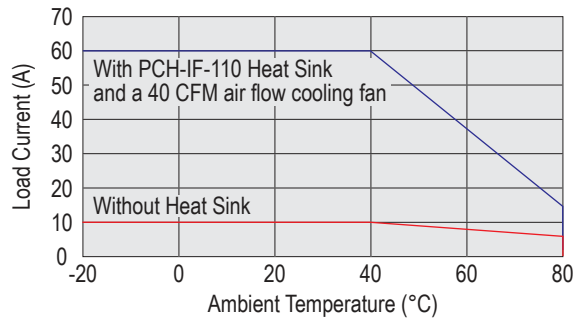
Max Load Current vs. Ambient Temperature (40A)



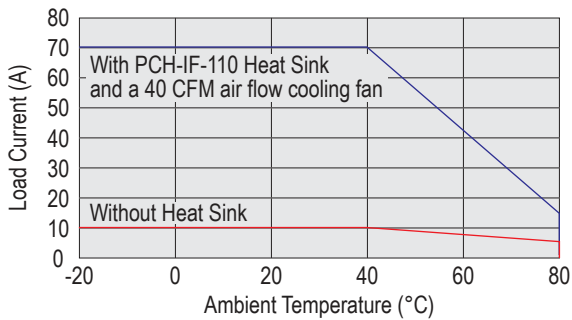
Max Load Current vs. Ambient Temperature (50A)



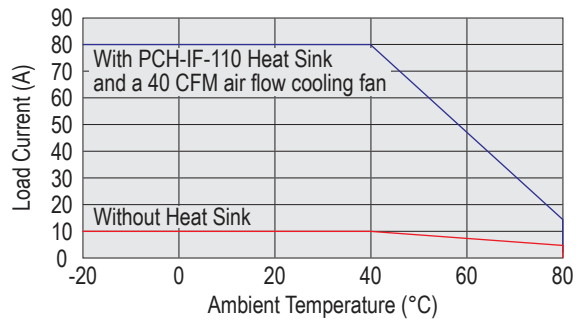
Max Load Current vs. Ambient Temperature (60A)



Max Load Current vs. Ambient Temperature (70A)



Max Load Current vs. Ambient Temperature (80A)

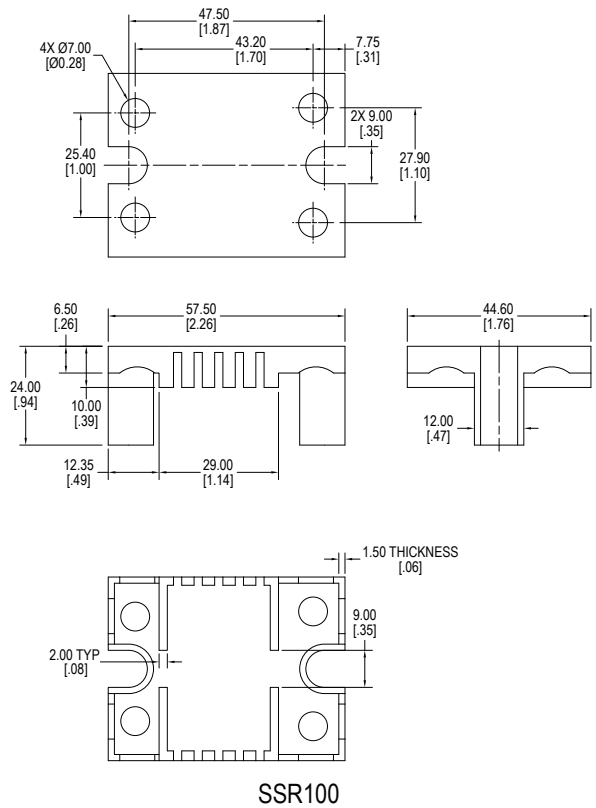


**ACCESSORIES** — Sold Separately

Heat Transfer Pad	HTP100
Protective Cover	SSR100
Heat Sinks	PCH-I-50 for applications up to 25 Amps @ 25°C PCH-M-120 for applications up to 35 Amps @ 25°C PCH-H-150 for applications up to 50 Amps @ 25°C PCH-IF-110 for applications up to 60 Amps @ 25C (requires an additional 40 CFM cooling fan)

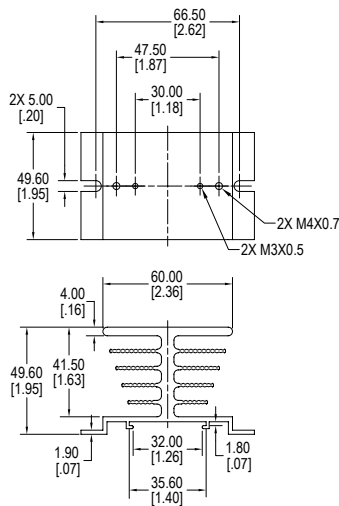


HTP100 — Heat Transfer Pad

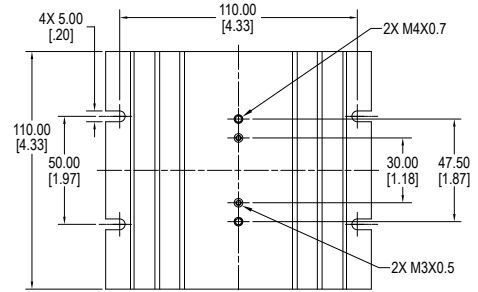


SSR100

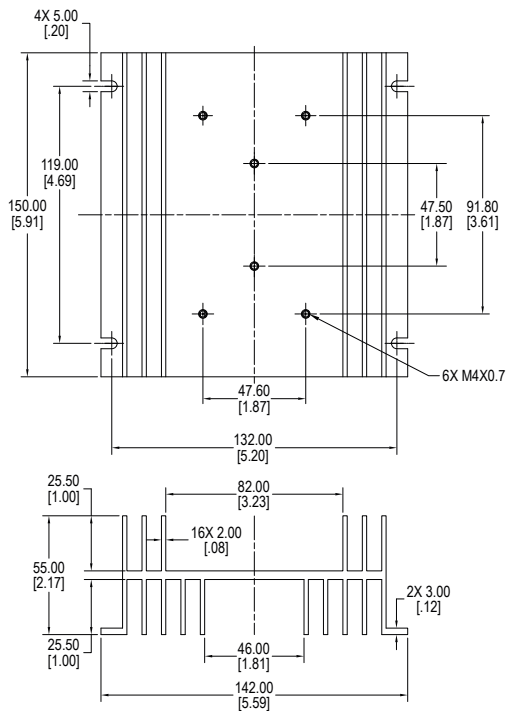
ACCESSORIES — Sold Separately Continued



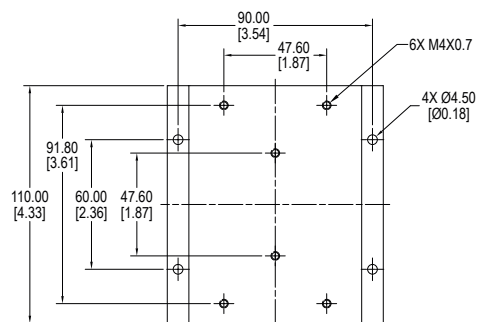
PCH-I-50 Heat Sink



PCH-M-120 Heat Sink



PCH-H-150 Heat Sink



PCH-IF-110 Heat Sink