

## AC Output SSRs

### Panel Mount



This installation sheet includes detailed mounting and wiring instructions which apply for most Crydom Panel Mount AC output SSRs. Be sure to visit the product series' datasheet available at the Crydom website to complement this information. If you have questions or need additional information please contact Crydom Tech Support.

Please read all mounting instructions before using your AC Output Panel Mount Solid State Relay (SSR).

### MOUNTING INSTRUCTIONS (A)

Choose one of the two mounting options and follow the instructions.

#### ■ Mounting on Heat Sinks

- ◆ Select adequate heat sink (see thermal derating curves in product series' datasheet).
- ◆ Be sure to use a thermal pad or thermal compound (0.006 - 0.008 in layer thickness recommended) between the SSR and the selected heat sink.
- ◆ SSR mounting slots have a diameter of 0.2 in (5.0 mm). Two screws are needed to mount the SSR onto heat sink (See fig. 1). Mounting screws are sold separately as HK1 and are suitable for all Crydom heat sinks. Otherwise, recommended screw size is 8-32 (UNC standard) or M4 (metric) depending on the heat sink model, see product datasheet. Choose screw length considering the mounting surface hole depth and that SSR baseplate thickness is 0.125 in (3.2 mm).
- ◆ Before applying full torque tighten down both screws until they contact the baseplate. Then, tighten them to 20 in-lb (2.2 Nm).
- ◆ For optimal thermal performance heat sink fins should be oriented vertically to promote natural convection airflow.

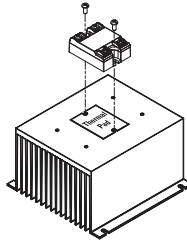


fig. 1 SSR mounted on HS053 heat sink (A)

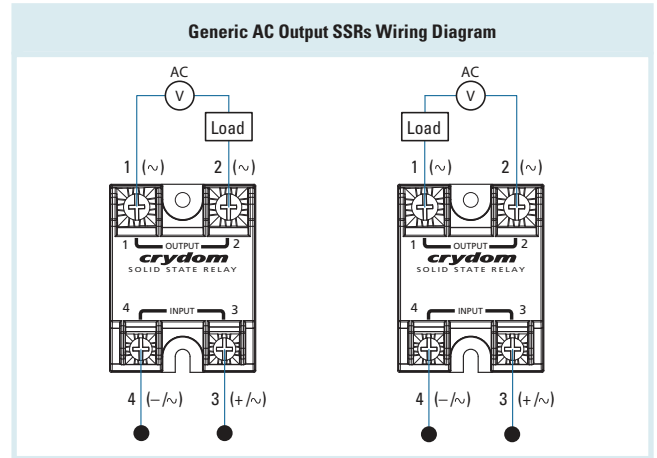
#### ■ Mounting on Panels

- ◆ Locate the panel section on which the SSR will be mounted. Panel mount surface must provide adequate heat sinking capability, uncoated, clean, flat (0.004 in/in recommended) and preferably aluminum.
- ◆ Be sure to use a thermal pad or thermal compound (0.006 - 0.008 in layer thickness recommended) between the SSR and the panel.
- ◆ SSR mounting slots have a diameter of 0.2 in (5.0 mm). Two screws are needed (not included) to mount the SSR onto panel. Choose screw length considering the mounting surface hole depth and that the SSR baseplate thickness is 0.125 in (3.2 mm).
- ◆ Before applying full torque tighten down both screws until they contact the baseplate. Then, tighten them to 20 in-lb (2.2 Nm).

TABLE 1. Accessories (A)

Cover	Hardware Kit	Heat Sink Part No.	Thermal Resistance [°C/W]	Lug Terminal	Thermal Pad
KS101	HK1 HK4	HS501DR	5.0	TRM1 TRM6	HSP-1 HSP-2
		HS301 / HS301DR	3.0		
	HS251	2.5			
	HS202 / HS202DR	2.0			
	HS201 / HS201DR	2.0			
	HS172	1.7			
	HS151 / HS151DR	1.5			
	HS122	1.2			
	HS103 / HS103DR	1.0			
	HS101	1.0			
	HS073	0.7			
	HS072	0.7			
	HS053	0.5			
	HS033	0.36			
	HS023	0.25			

### WIRING DIAGRAMS (B)



#### ■ Terminals

Screw, Quick connect or Installed standoff according to selection. Standard screw terminals are for Input: 6-32, Combo Drive; and for Output: 8-32, Combo Drive. Maximum screw torque is 15 in-lb (1.7 Nm) on input and 20 in-lb (2.2 Nm) on output. Quick connect Single pair for models up to 25 Amp; Double pair for 50 Amp models only. User must connect both pairs. Installed Standoff model for PCB mounting or similar applications up to 50 Amp, standard screw torque is 8-10 in-lb (0.9-1.13 Nm) on Input and Output. (C)

#### ■ Wire Size

Choose wire gauge according to actual load current (see TABLE 2). For larger wire sizes use lug terminals (see TABLE 1 for available part numbers).

TABLE 2. Recommended Wire Sizes

Terminals	Wire Size (Solid / Stranded)	Wire Pull-Out Strength (lbs) [N]
Input	24 AWG (0.2 mm <sup>2</sup> ) / 0.2 [minimum]	10 [44.5]
	2 x 12 AWG (3.3 mm <sup>2</sup> ) / 3.3 [maximum]	90 [400]
Output	20 AWG (0.5 mm <sup>2</sup> ) / 0.518 [minimum]	30 [133]
	2 x 10 AWG (5.3 mm <sup>2</sup> ) / 5.3	110 [490]
	2 x 8 AWG (8.4 mm <sup>2</sup> ) / 8.4 [maximum]	90 [400]

#### ■ Connections

Ensure that wires ends are stripped to a minimum length of 0.46 in (11.7 mm) for input and 0.49 in (12.5 mm) for output.

#### ■ Transient Protection

Transients are common on AC power lines, and in extreme cases, may pose a risk for the proper operation and reliability of the SSR and its load. The load which the SSR controls may also generate transients itself. Therefore, inclusion of transient protection for the SSR is highly recommended. Internal transient protection is standard in certain Crydom SSR models, and optionally available in others. The user may also install transient protection external to the SSR for additional protection. Contact Crydom technical support for additional information on use of transient protection for AC output SSRs.

#### ■ Important Considerations

Be sure to use input and output voltages within operating ranges. LED indicates only input status. It does not represent output status.

(A) See compatible accessories in corresponding datasheet.

(B) Load can be wired to either terminal 1 or terminal 2. Proper polarity must be observed all the time for the DC control power supply, with terminal 3 being positive with respect to terminal 4.

(C) Option "K" is designed and tested for use with printed circuit boards or ring/fork terminals having a thickness between 0.031 and 0.093 inches (0.79 to 2.36 mm), and loads rated up to 50 Amps. For higher load currents, the "K" standoff temperature must not exceed 105°C. For additional application assistance please contact Crydom Technical Support.

**! DANGER / PELIGRO / DANGER /GEFAHR / PERICOLO / 危險**

<p><b>HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH.</b></p> <ul style="list-style-type: none"> <li>Disconnect all power before installing or working with this equipment.</li> <li>Verify all connections and replace all covers before turning on power.</li> </ul> <p><b>Failure to follow these instructions will result in death or serious injury.</b></p>	<p><b>RIESGO DE DESCARGA ELECTRICA O EXPLOSION.</b></p> <ul style="list-style-type: none"> <li>Desconectar todos los suministros de energia a este equipo antes de trabajar con este equipo.</li> <li>Verificar todas las conexiones y colocar todas las tapas antes de energizar el equipo.</li> </ul> <p><b>El incumplimiento de estas instrucciones puede provocar la muerte o lesiones serias.</b></p>	<p><b>RISQUE DE DESCARGE ELECTRIQUE OU EXPLOSION</b></p> <ul style="list-style-type: none"> <li>Eteindre toutes les sources d'énergie de cet appareil avant de travailler dessus de cet appareil</li> <li>Vérifier tous connections, et remettre tous couverts en place avant de mettre sous</li> </ul> <p><b>De non-suivi de ces instructions provoquera la mort ou des lésions sérieuses sérieuses.</b></p>	<p><b>GEFAHR EINES ELEKTRISCHE N SCHLAGES ODER EINER EXPLOSION.</b></p> <ul style="list-style-type: none"> <li>Stellen Sie jeglichen Strom ab, der dieses Gerät versorgt, bevor Sie an dem Gerät Arbeiten durchführen</li> <li>Vor dem Drehen auf Energie alle Anschlüsse überprüfen und alle Abdeckungen ersetzen.</li> </ul> <p><b>Unterlassung dieser Anweisungen können zum Tode oder zu schweren Verletzungen führen.</b></p>	<p><b>RISCHIO DI SCOSSA ELETTRICA O DELL'ESPLOSIONE.</b></p> <ul style="list-style-type: none"> <li>Spenga tutta l'alimentazione fornisce questa apparecchiatura prima di lavorare a questa apparecchiatura</li> <li>Verificare tutti i collegamenti e sostituire tutte le coperture prima dell'accensione</li> </ul> <p><b>L'omissione di queste istruzioni provocherà la morte o lesioni serie.</b></p>	<p><b>存在电击、爆炸或电弧闪烁危险</b></p> <ul style="list-style-type: none"> <li>在操作此设备之前请先关闭电源。</li> </ul> <p><b>若不遵守这些说明,可能会导致严重的人身伤害甚至死亡。</b></p>
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**! WARNING / AVERTISSEMENT / WARNUNG /ADVERTENCIA / AVVERTENZA / 警告**

<p><b>RISK OF MATERIAL DAMAGE AND HOT ENCLOSURE</b></p> <ul style="list-style-type: none"> <li>The product's side panels may be hot, allow the product to cool before touching.</li> <li>Follow proper mounting instructions including torque values.</li> <li>Do not allow liquids or foreign objects to enter this product.</li> </ul> <p><b>Failure to follow these instructions can result in serious injury, or equipment damage.</b></p>	<p><b>RISQUE DE DOMMAGE MATERIEL ET DE SURCHAUFFE DU BOITIER</b></p> <ul style="list-style-type: none"> <li>Les panneaux latéraux du produit peuvent être chauds. Laisser le produit refroidir avant de le toucher.</li> <li>Respecter les consignes de montage, et notamment les couples de serrage.</li> <li>Ne pas laisser pénétrer de liquide ni de corps étrangers à l'intérieur du produit.</li> </ul> <p><b>Le non-respect de cette directive peut entraîner, des lésions corporelles graves ou des dommages matériels.</b></p>	<p><b>GEFAHR VON MATERIALSCHÄDEN UND GEHÄUSEERHITZUNG</b></p> <ul style="list-style-type: none"> <li>Die Seitenwände können heiß sein. Lassen Sie das Produkt abkühlen, bevor Sie es berühren.</li> <li>Beachten Sie die Montageanweisungen, Führen Sie keine Flüssigkeiten oder Fremdkörper in das Produkt ein.</li> </ul> <p><b>Die Nichtbeachtung dieser Anweisung kann Körperverletzung oder Materialschäden zur Folge haben.</b></p>
<p><b>RIESGO DE DAÑOS MATERIALES Y DE SOBRECALENTAMIENTO DE LA UNIDAD</b></p> <ul style="list-style-type: none"> <li>Los paneles laterales del producto pueden estar calientes. Esperar que el producto se enfríe antes de tocarlo.</li> <li>Respetar las instrucciones de montaje, y en particular los pares de apretado.</li> <li>No dejar que penetren líquidos o cuerpos extraños en el producto.</li> </ul> <p><b>Si no se respetan estas precauciones pueden producirse graves lesiones, daños materiales.</b></p>	<p><b>RISCHIO DI DANNI MATERIALI E D'INVOLUCRO CALDO</b></p> <ul style="list-style-type: none"> <li>I pannelli laterali dell'apparecchio possono scottare; lasciar quindi raffreddare il prodotto prima di toccarlo.</li> <li>Seguire le istruzioni di montaggio corrette.</li> <li>Non far entrare liquidi o oggetti estranei in questo apparecchio.</li> </ul> <p><b>La mancata osservanza di questa precauzione può causare gravi rischi per l'incolumità personale o danni alle apparecchiature.</b></p>	<p><b>材料损坏和高温外壳的危险性</b></p> <ul style="list-style-type: none"> <li>产品的一侧面板可能很热, 在其冷却前请不要触碰。</li> <li>遵照正确的安装说明, 包括扭矩值。</li> <li>请勿让液体及其他异物进入本产品。</li> </ul> <p><b>如不能正确执行这些操作说明, 极有可能造成严重人体伤害或者设备的损坏。</b></p>