

## HS Series Heat Sinks & Assemblies

This installation sheet includes detailed mounting instructions which apply for most Crydom HS Series Heat Sinks & Assemblies. 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 HS Series Heat Sinks & Assemblies.

### MOUNTING INSTRUCTIONS (A)

Choose one of the two mounting options according to the selected heat sink or assembly and follow the instructions.

#### Mounting an SSR onto a Heat Sink

- 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 a single phase or dual SSR onto heat sink (See **fig. 1**). HS Series Heat Sinks include the necessary hardware to mount the relay(s) onto the heat sink. The number of hardware kits (HK1 or HKM1) included depends upon the number and type of SSRs possible to install on each heat sink. Recommended screw size is 8-32 (UNC standard) or M4 (metric) depending on the selected heat sinks. If you provide your own mounting screws choose screw length considering the mounting surface hole depth and SSR baseplate thickness.
- Before applying full torque tighten down both screws until they contact the baseplate. Then, tighten them to 20 in-lbs (2.2 Nm).
- For optimal thermal performance heat sink fins should be oriented vertically to promote natural convection airflow. (See **fig. 2**)

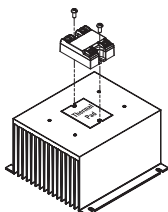


fig. 1 SSR mounted on HS053 heat sink (A)

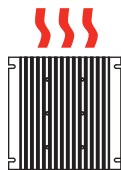


fig. 2 Maximum heat sink dissipation on natural convection

#### Mounting an Assembly on a Panel or DIN Rail

- For Panel Mounting install as shown in **fig. 3**. Recommended screw size is 8-32 (UNC standard) or M4 (metric).
- For DIN Rail Mounting install as shown in **fig. 4**. Vertical mounting operation is recommended.

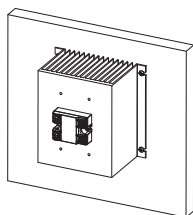


fig. 3 Panel Mounting

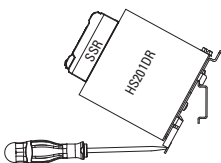


fig. 4 DIN Rail Mounting

#### Terminals

- S1 Generation 4 SSRs**  
Screw type, touch safe. Input: 6-32, Combo Drive. Output: 8-32, Combo Drive. Maximum screw torque is 15 in-lbs (1.7 Nm) on input and 20 in-lbs (2.2 Nm) on output. See **table 1** or **table 2** for compatible accessories.
- Evolution Dual Series**  
Screw type, finger proof. Output: 8-32, Combo Drive. Maximum screw torque is 20 in-lbs (2.2 Nm) on output. See **table 1** or **table 2** for compatible accessories.
- 53TP Series**  
Screw type, finger proof (IP20 only). Input: 6-32, Combo Drive, Output: 8-32, Combo Drive. For IP00 models, Input: 6-32, Combo Drive, Output: 10-32, Combo Drive. Maximum screw torque is 10 in-lbs (1.1 Nm) on input and 20 in-lbs (2.2 Nm) on output. See **table 1** or **table 2** for compatible accessories.

#### Wire Size

- S1 Generation 4 SSRs**  
Maximum wire size capacity per terminal: input AWG #12 (3.3 mm<sup>2</sup>) x 2, output AWG #8 (8.4 mm<sup>2</sup>) x 2. Choose wire gauge according to actual load current. For larger wire sizes use lug terminals. See **table 1** or **table 2** for compatible accessories.
- Evolution Dual Series**  
Maximum wire size capacity per terminal: output AWG #8 (8.4 mm<sup>2</sup>) x 2, for detail in input terminal see SSR's datasheet. Choose wire gauge according to actual load current. For larger wire sizes use lug terminals. See **table 1** or **table 2** for compatible accessories.
- 53TP Series**  
Maximum wire size capacity per terminal: input AWG #14 (2.1 mm<sup>2</sup>), output AWG #8 (8.4 mm<sup>2</sup>). Choose wire gauge according to actual load current. For larger wire sizes use lug terminals. See **table 1** or **table 2** for compatible accessories.

**TABLE 1. Heat Sink Compatible Accessories (A)**

Part number	HK1	HK2	HKM1	HSP-1 HSP-2	HSP-3 HSP-5	KS100 KS101	KS300	TRM6	TRM1	TRM3/0	DRK1
HS501DR			♦	♦		♦		♦	♦		
HS301	♦	♦		♦				♦			♦
HS251	♦			♦		♦		♦	♦		
HS202	♦	♦		♦	♦	♦	♦	♦	♦	♦	♦
HS201	♦	♦		♦		♦		♦	♦		♦
HS172	♦	♦		♦		♦		♦	♦		
HS151	♦	♦		♦		♦		♦	♦		♦
HS122	♦	♦		♦	♦	♦	♦	♦	♦	♦	♦
HS103	♦			♦	♦	♦	♦	♦	♦	♦	
HS101			♦	♦	♦	♦	♦	♦	♦	♦	
HS073	♦			♦	♦	♦	♦	♦	♦	♦	
HS072	♦			♦	♦	♦		♦	♦		
HS053	♦			♦	♦	♦	♦	♦	♦	♦	
HS033	♦			♦	♦	♦	♦	♦	♦	♦	
HS023	♦			♦	♦	♦	♦	♦	♦	♦	

**TABLE 2. SSR/Heat Sink Assemblies Compatible Accessories (A)**

Heat Sink Part No.	Thermal Resistance [°C/W]	Solid State Relay	Cover	Hardware Kit	Lug Terminal	Thermal Pad
HS501DR	5.0			HKM1		
HS301	3.0	D2425 HD6025	KS100 KS101	HK1 HK2		
HS251	2.5			HK1		
HS202DR	2.0	D2450 HD6050				
HS201DR	2.0	CC2425W3U CD4850V4U	N/A			HSP-1 HSP-2
HS172	1.7	D2450 HD6050	KS100 KS101	HK1 HK2		
HS151DR	1.5	CC2450W3U	N/A		TRM6 TRM1 TRM3/0	
HS122DR	1.2	D2450 HD6050	KS100 KS101			
HS103DR	1.0	D2490 HD6090	KS103			HSP-3 HSP-5
HS072	0.7	D2490 HD6090	KS100 KS101	HK1		HSP-1 HSP-2
HS053	0.5	D24125 HD60125	KS103			HSP-3 HSP-5

#### Important Considerations

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

#### General Notes

(A) See compatible accessories in corresponding datasheet.

**! 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 e che fornisce questa apparecchiatura prima del lavorare a questa apparecchiatura ra</li> <li>• Verificare tutti i collegamenti e sostituire tutte le coperture prima della rotazione sull'alimentazione</li> </ul> <p><b>L'omissione di seguire queste istruzioni provocherà la morte o di 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>