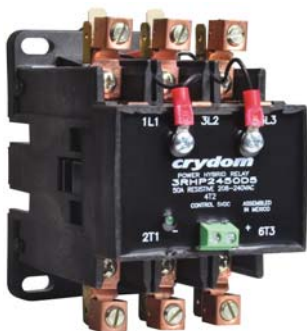


## 3RHP Series DC Control



- 100K-cycle UL508 Endurance Rating for Enhanced Reliability
- 40 and 50A output
- Voltage ratings to 240 VAC
- Lifetime 2 million operations at full load
- LED input status indicator
- Wire, lug or quick connect termination
- Industry Standard DP contactor mounting

### PRODUCT SELECTION (by control voltage and output rating)

| Control Voltage | 40A 120 VAC | 50A 120 VAC | 40A 240 VAC | 50A 240 VAC |
|-----------------|-------------|-------------|-------------|-------------|
| 4.5-5.5 VDC     | 3RHP1240D5  | 3RHP1250D5  | 3RHP2440D5  | 3RHP2450D5  |
| 10-15 VDC       | 3RHP1240D12 | 3RHP1250D12 | 3RHP2440D12 | 3RHP2450D12 |
| 22-27 VDC       | 3RHP1240D24 | 3RHP1250D24 | 3RHP2440D24 | 3RHP2450D24 |

### OUTPUT SPECIFICATIONS (voltage)

| Description                                   | 120 VAC           | 240 VAC           |
|-----------------------------------------------|-------------------|-------------------|
| Operating Voltage (47-63Hz) [Vrms]            | 100-120           | 208-240           |
| Maximum Off-State Leakage Current per channel | 0.05 mA @ 120 VAC | 0.06 mA @ 240 VAC |

### OUTPUT SPECIFICATIONS (current)

| Description                                      | 40A                                             | 50A                             |
|--------------------------------------------------|-------------------------------------------------|---------------------------------|
| Maximum Load Current per phase @ 40°C [Arms] (1) | 40A Resistive                                   | 50A Resistive                   |
| Power terminals                                  | 1/4" Quick Connect and 10x32 binder head screws | 1/4" Quick Connect and box lugs |
| Wire Size                                        | 8-14 AWG                                        | 6-14 AWG                        |

### INPUT SPECIFICATIONS

| Description           | SUFIX D5     | SUFIX D12     | SUFIX D24     |
|-----------------------|--------------|---------------|---------------|
| Coil Voltage          | 4.5-5.5 VDC  | 10-15 VDC     | 22-27 VDC     |
| Max. Reverse Voltage  | -5.5 VDC     | -15.5 VDC     | -27.5 VDC     |
| Input Current         | 12mA @ 5 VDC | 12mA @ 12 VDC | 12mA @ 24 VDC |
| Min. Turn-On Voltage  | 4.5 VDC      | 9.5 VDC       | 9.5 VDC       |
| Min. Turn-Off Voltage | 1 VDC        | 2 VDC         | 2 VDC         |

### GENERAL SPECIFICATIONS

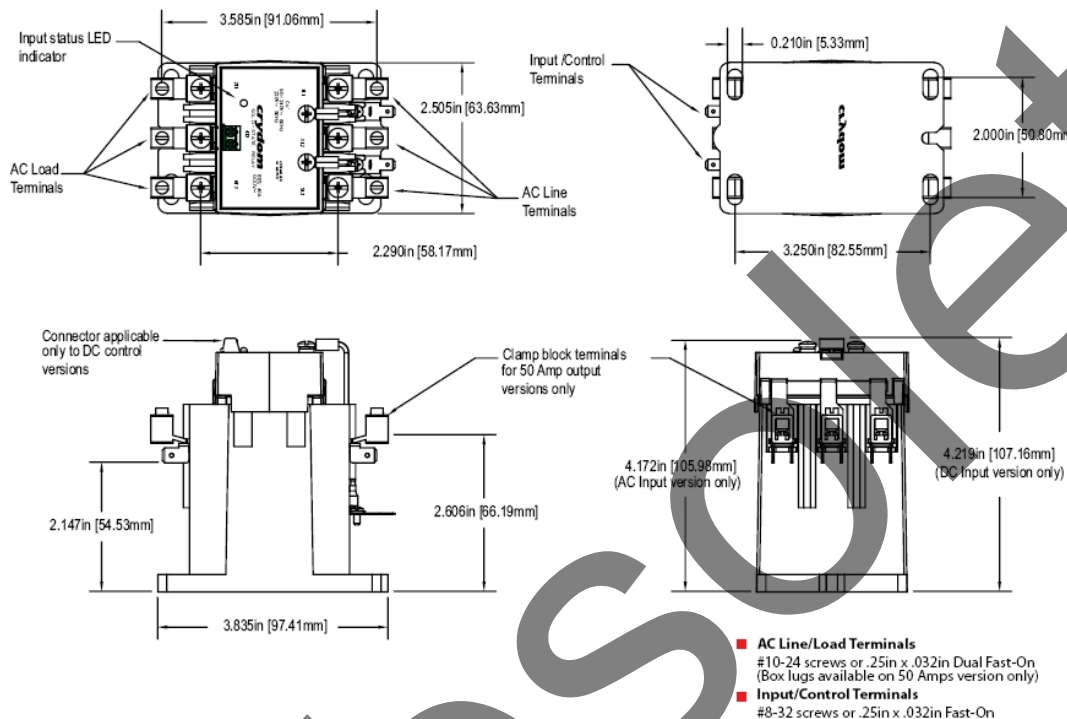
| Description                                       | Parameters                                          |
|---------------------------------------------------|-----------------------------------------------------|
| Dielectric Strength, Input to Output              | 4000 Vrms                                           |
| Dielectric Strength, Input/Output to ground       | 2500 Vrms                                           |
| Contacts (2)                                      | Three Normally Open                                 |
| Ambient Operating Temperature Range (3)           | -20 to 75 °C                                        |
| Ambient Storage Temperature Range                 | -40 to 100 °C                                       |
| Max. Turn-On Time 50/60 Hz                        | 20 ms / 16.6 ms                                     |
| Max. Turn-Off Time 50/60Hz                        | 40 ms / 32 ms                                       |
| Maximum Number of Operations                      | 30 per Minute                                       |
| Lifetime Number of Operations @ Rated Current (4) | > 2 Million                                         |
| Weight (typical)                                  | 1.19 lbs (540 g)                                    |
| Screw Torque (input/output) 40A                   | 4.4-5 in lb (0.5-0.6 Nm) / 15-18 in lb (1.7-2.1 Nm) |
| Screw Torque (input/output) 50A                   | 4.4-5 in lb (0.5-0.6 Nm) / 20-25 in lb (2.2-2.9 Nm) |

## GENERAL NOTES

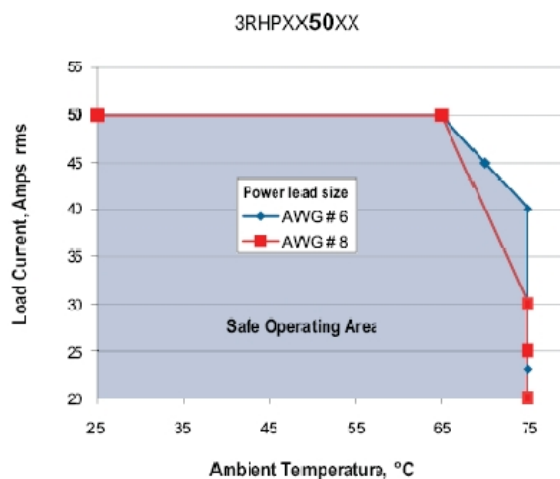
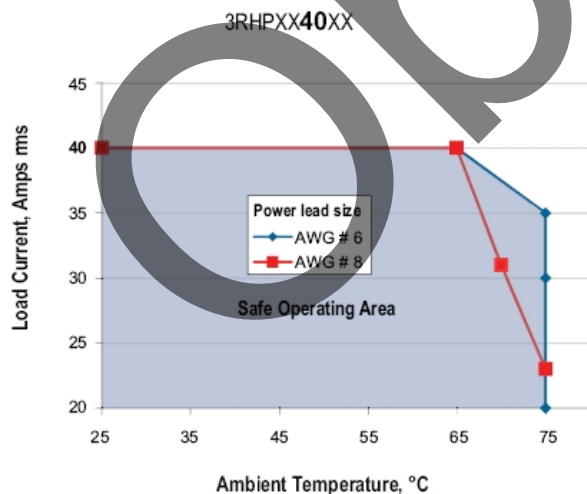
- (1) See Derating curves for additional operating conditions.
- (2) The RHP includes a Solid State Relay, therefore electrical isolation is not provided.
- (3) The RHP includes over temperature protection for the solid state relay.
- (4) 40°C ambient temperature, 30 operations/min, maximum voltage control.

## MECHANICAL SPECIFICATIONS

(Tolerances:  $\pm 0.02$  in / 0.5 mm)



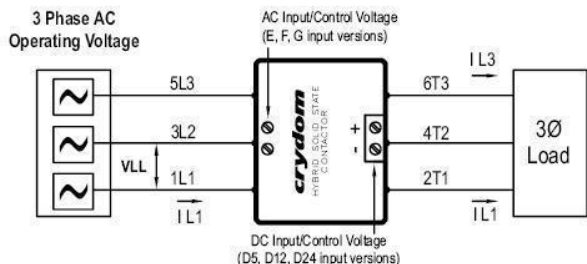
## THERMAL DERATE INFORMATION



## TYPICAL ELECTRICAL CONNECTIONS

### Typical Electrical Connection for 3 Phase Applications<sup>Ⓢ</sup>

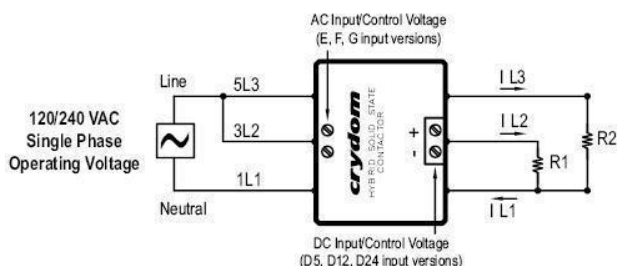
(For output voltage options 24, 28, 60)



DO NOT apply any AC voltage to DC contactor coil connections

### Optional Electrical Connections for Single Phase Applications<sup>Ⓢ</sup>

(For output voltage options 12, 24, 28, 60)



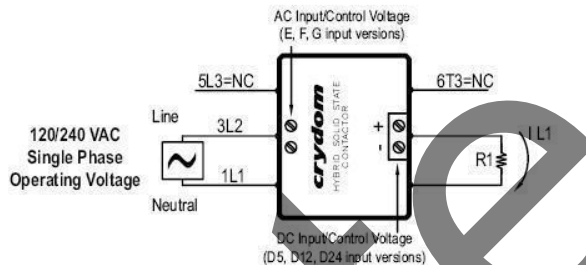
DO NOT apply any AC voltage to DC contactor coil connections

$$IL1 = (IL2 + IL3) \leq \text{Rated current}$$

- Ⓢ Match VLL to voltage suffixes 28 & 60 for options E, F & G and 12 & 24 for options DX.
  - Ⓢ The single phase supply voltage must be wired to terminal 1L1 and 3L2 for proper single phase operation.
  - Ⓢ In applications switching two single phase loads (R1 and R2) where the combined load current exceeds the contactor's rating (40 or 50 Amps) the return/neutral lead must not be wired through the contactor (see above drawing).
- Caution: Risk of overheating. Do not allow any single phase connection to exceed the current rating of the relay. Failure to follow these instructions may result in equipment damage.

### Optional Electrical Connections for Single Phase Applications<sup>Ⓢ</sup>

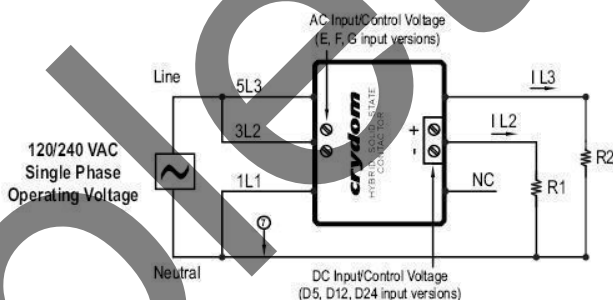
(For output voltage options 12, 24, 28, 60)



DO NOT apply any AC voltage to DC contactor coil connections

### Optional Electrical Connections for Single Phase Applications<sup>Ⓢ</sup>

(For output voltage options 12, 24, 28, 60)



DO NOT apply any AC voltage to DC contactor coil connections

$$IL2 \leq \text{Rated current}$$

$$IL3 \leq \text{Rated current}$$

$$IL2 + IL3 > \text{Rated current}$$

## AGENCY APPROVALS

UL/cUL UL508, E116950

CE EN60950-1-2006

Rev.073011

**ACCESSORIES****Accessories****DIN rail bracket**

Part Number DMB3

Description DIN Rail mounting adaptor kit

**Auxiliary contact**

HAC1

Includes one normally open & one normally closed contact, each rated @ 5 Amps rms, 600 VAC, 50/60 Hz 2.5 in Quick Connect

**Mounted auxiliary contact**

Note: 3RHP accommodates one or two HAC1 auxiliary contacts

**Mounted DIN rail bracket**

|  <b>DANGER / PELIGRO / DANGER /GEFAHR / PERICOLO / PERIGO</b>                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH.</b> <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>Failure to follow these instructions will result in death or serious injury.</p> | <b>RIESGO DE DESCARGA ELECTRICA O EXPLOSION.</b> <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>El incumplimiento de estas instrucciones puede provocar la muerte o lesiones serias.</p> | <b>RISQUE DE DESCARGE ELECTRIQUE OU EXPLOSION</b> <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>De non-suivi de ces instructions provoquera la mort ou des lésions sérieuses.</p> | <b>GEFAHR EINES ELEKTRISCHE N SCHLAGES ODER EINER EXPLOSION.</b> <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 der Inbetriebnahme alle Anschlüsse überprüfen und alle Gehäuseteile montieren.</li> </ul> <p>Unterlassung dieser Anweisungen können zum Tode oder zu schweren Verletzungen führen.</p> | <b>RISCHIO DI SCOSSA ELETTRICA O DELL'ESPLOSIONE.</b> <ul style="list-style-type: none"> <li>Spenga tutta l'alimentazione e che fornisce questa apparecchiatura prima del lavorare a questa apparecchiatura</li> <li>Verificare tutti i collegamenti e sostituire tutte le coperture prima della rotazione sull'alimentazione</li> </ul> <p>L'omissione di seguire queste istruzioni provocherà la morte o di lesioni serie</p> | <b>RISCO DE DESCARGA ELÉTRICA OU EXPLOÇÃO</b> <ul style="list-style-type: none"> <li>Desconectar o equipamento de toda a energia antes de instalar ou trabalhar com este equipamento</li> <li>Verificar todas as conexões e recolocar todas as tampas antes de religar o equipamento</li> </ul> <p>O não cumprimento destas instruções pode levar a morte ou lesões sérias.</p> |

|  <b>WARNING / AVERTISSEMENT / WARNUNG /ADVERTENCIA / AVVERTENZA / AVISO</b>                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>RISK OF MATERIAL DAMAGE AND HOT ENCLOSURE</b> <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>Failure to follow these instructions can result in serious injury, or equipment damage.</p>                                                                           | <b>RISQUE DE DOMMAGE MATERIEL ET DE SURCHAUFFE DU BOITIER</b> <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>Le non-respect de cette directive peut entraîner, des lésions corporelles graves ou des dommages matériels.</p> | <b>GEFAHR VON MATERIALSCHÄDEN UND GEHÄUSEERHITZUNG</b> <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,</li> <li>Führen Sie keine Flüssigkeiten oder Fremdkörper in das Produkt ein.</li> </ul> <p>Die Nichtbeachtung dieser Anweisung kann Körperverletzung oder Materialschäden zur Folge haben.</p>                    |
| <b>RIESGO DE DAÑOS MATERIALES Y DE SOBRECALENTAMIENTO DE LA UNIDAD</b> <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>Si no se respetan estas precauciones pueden producirse graves lesiones, daños materiales.</p> | <b>RISCHIO DI DANNI MATERIALI E D'INVOLUCRO CALDO</b> <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>La mancata osservanza di questa precauzione può causare gravi rischi per l'incolumità personale o danni alle apparecchiature.</p>                           | <b>RISCO DE DANO MATERIAL E DE AQUECIMENTO</b> <ul style="list-style-type: none"> <li>Os painéis laterais do produto podem estar quentes; dê tempo ao produto para arrefecer antes de lhe tocar.</li> <li>Siga devidamente as instruções de montagem.</li> <li>Não permita a entrada de líquidos e de objectos estranhos no produto.</li> </ul> <p>A não observância destas precauções pode provocar a morte, ferimentos graves ou danos materiais.</p> |

## ANNEX - ENVIROMENTAL INFORMATION

The environmental information disclosed in this annex including the EIP Pollution logo are in compliance with People's Republic of China Electronic Industry Standard SJ/T11364 – 2006, Marking for Control of Pollution Caused by Electronic Information Products.

| Part Name         | Toxic or hazardous Substance and Elements |              |              |                               |                                |                                       |
|-------------------|-------------------------------------------|--------------|--------------|-------------------------------|--------------------------------|---------------------------------------|
|                   | Lead (Pb)                                 | Mercury (Hg) | Cadmium (Cd) | Hexavalent Chromium (Cr (VI)) | Polybrominated biphenyls (PBB) | Polybrominated diphenyl ethers (PBDE) |
| Semiconductor die | X                                         | O            | O            | O                             | O                              | O                                     |
| Solder            | X                                         | O            | O            | O                             | O                              | O                                     |

此附件所标示的包括电子信息产品污染图标的环境信息  
符合中华人民共和国电子行业标准 **SJ/T11364 - 2006**,  
电子信息产品污染控制标识要求

| 部件名称  | 有毒有害物质或元素 |        |        |               |            |              |
|-------|-----------|--------|--------|---------------|------------|--------------|
|       | 铅 (Pb)    | 汞 (Hg) | 镉 (Cd) | 六价铬 (Cr (VI)) | 多溴联苯 (PBB) | 多溴二苯醚 (PBDE) |
| 半导体芯片 | X         | O      | O      | O             | O          | O            |
| 焊接点   | X         | O      | O      | O             | O          | O            |