

## 53TP Series IP00

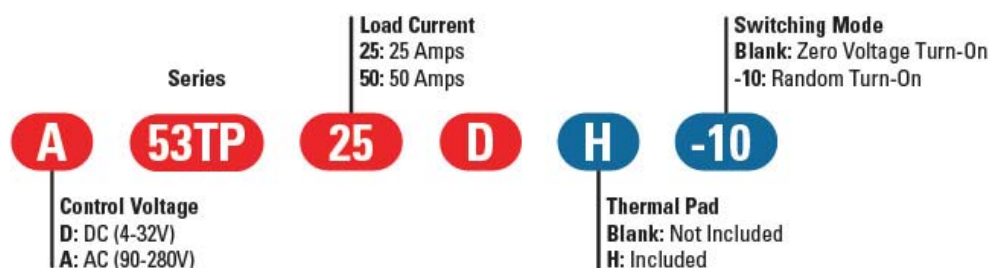


- Three-phase solid-state relay; Ratings 25A, 50A per phase @ 48-530 VAC
- 2 package styles IP00 or IP20 (See IP20 spec sheet for more information)
- SCR output for heavy industrial loads
- Transient protection built in
- AC or DC control
- Zero-crossing (resistive loads) or random-fire (inductive loads) output
- LED input status indicator
- UL Recognized, CE Compliant to EN60950-1

### PRODUCT SELECTION

| Control Voltage | 25A      | 50A      |
|-----------------|----------|----------|
| 90-280 VAC      | A53TP25D | A53TP50D |
| 4-32 VDC        | D53TP25D | D53TP50D |

### AVAILABLE OPTIONS



Red circle: Required for valid part number

Blue circle: For options only and not required for valid part number

### OUTPUT SPECIFICATIONS (1)

| Description                                                                  | 25 A    | 50 A      |
|------------------------------------------------------------------------------|---------|-----------|
| Operating Voltage (47-63Hz) [Vrms]                                           | 48-530  | 48-530    |
| Transient Overvoltage [Vpk] (2)                                              | 1200    | 1200      |
| Maximum Off-State Leakage Current @ Rated Voltage [mA <sub>rms</sub> ]       | 10      | 10        |
| Minimum Off-State dv/dt @ Maximum Rated Voltage [V/μsec] (3)                 | 500     | 500       |
| Maximum Load Current [A <sub>rms</sub> ] (4)                                 | 25      | 50        |
| Minimum Load Current [A <sub>rms</sub> ]                                     | 0.05    | 0.05      |
| Maximum Surge Current 50-60 Hz (16.6ms) [A <sub>pk</sub> ]                   | 239/250 | 597/625   |
| Maximum On-State Voltage Drop @ Rated Current [V <sub>pk</sub> ]             | 1.6     | 1.6       |
| Thermal Resistance Junction to Case (R <sub>jc</sub> ) [°C/W]                | 1.02    | 0.63      |
| Maximum I <sup>2</sup> t for Fusing 50-60 Hz (8.3 msec) [A <sup>2</sup> sec] | 285/260 | 1779/1620 |
| Minimum Power Factor (with Maximum Load)                                     | 0.5     | 0.5       |

### INPUT SPECIFICATIONS (1)

| Description                          | D53             | A53             |
|--------------------------------------|-----------------|-----------------|
| Control Voltage Range                | 4-32 VDC        | 90-280 Vrms     |
| Minimum Turn-On Voltage              | 4.0 VDC         | 90 Vrms         |
| Minimum Turn-Off Voltage             | 1.0 VDC         | 10 Vrms         |
| Minimum Input Current (for on-state) | 19 mA @ 4V      | 2.2 mA @ 120V   |
| Maximum Input Current                | 25 mA @ 32V     | 10mA @ 240V     |
| Nominal Input Impedance              | Current Limiter | Current Limiter |
| Maximum Turn-On Time [msec] (5)      | 1/2 Cycle       | 50              |
| Maximum Turn-Off Time [msec]         | 1/2 Cycle       | 50              |

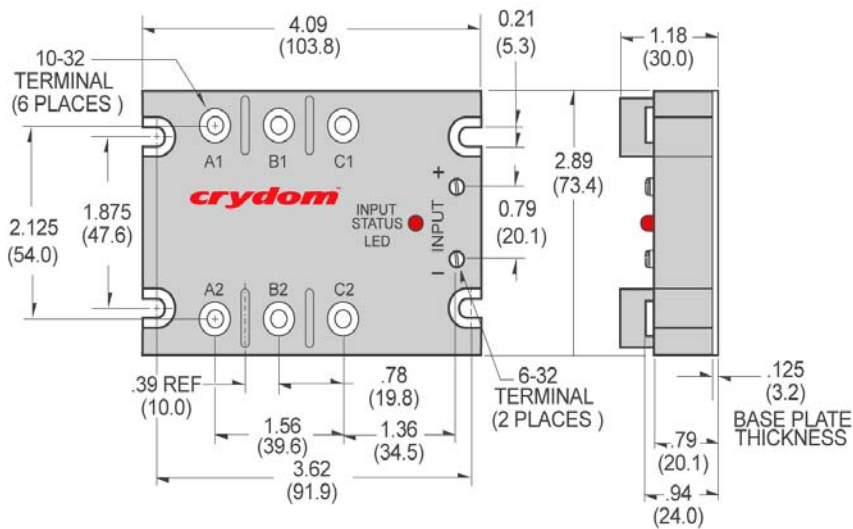
### GENERAL SPECIFICATIONS

| Description                                      | Parameters                 |
|--------------------------------------------------|----------------------------|
| Dielectric Strength, Input/Output/Base (50/60Hz) | 4000 Vrms                  |
| Minimum Insulation Resistance (@ 500 V DC)       | 10 <sup>9</sup> Ohm        |
| Maximum Capacitance, Input/Output                | 8 pF                       |
| Ambient Operating Temperature Range              | -40 to 80°C                |
| Ambient Storage Temperature Range                | -40 to 125 °C              |
| Weight (typical)                                 | 10.3 oz (315g)             |
| Encapsulation                                    | Thermally conductive Epoxy |
| Terminals                                        | Nickel plated Brass        |
| Screws and Saddle clamps                         | Zinc plated Steel          |
| Input Terminal Screw Torque Range:[in lbs/Nm]    | 8-10 / 0.9-1.1             |
| Output Terminal Screw Torque Range:[in lbs/Nm]   | 15-20 / 1.7-2.2            |

### GENERAL NOTES

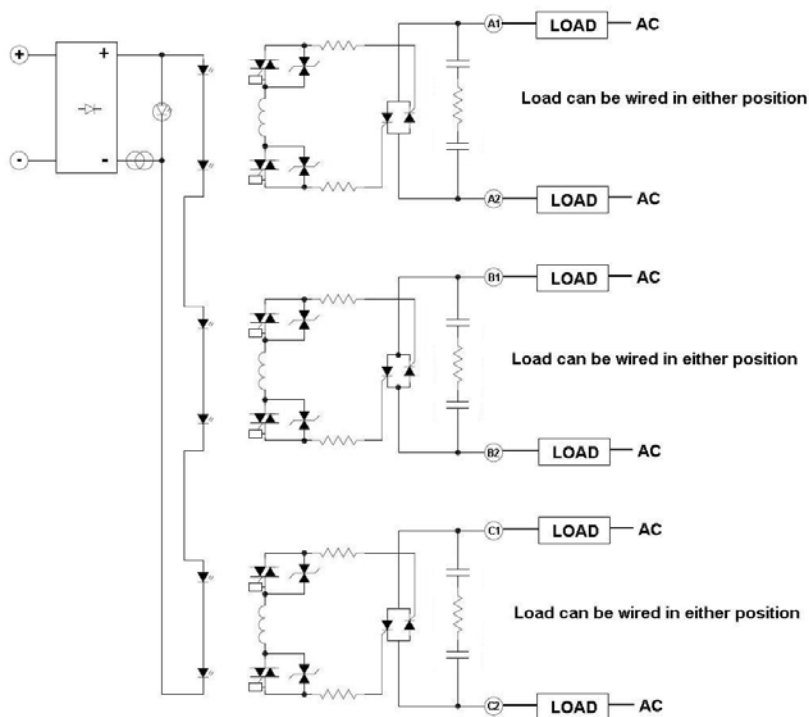
- 1) All parameters at 25°C unless otherwise specified.
- 2) Relay will self trigger between 900-1200 Vpk.
- 3) Off-State dv/dt test method per EIA/NARM standard RS-443, paragraph 13.11.1
- 4) Heat sinking required, see page 4 for derating curves.
- 5) Turn-on time for Random turn-on versions is 0.02 msec (DC Control Models)

## MECHANICAL SPECIFICATIONS

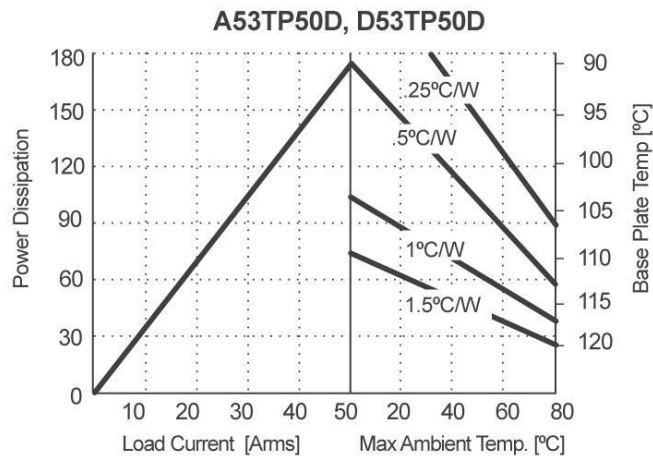
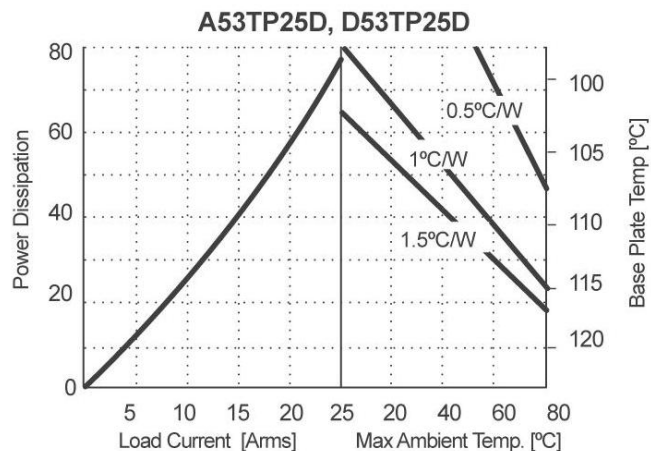


All dimensions are in inches (millimeters)

## WIRING DIAGRAM



### THERMAL DERATE INFORMATION



### AGENCY APPROVALS

Input :

EN61000-4-2, Level 3 ESD

EN61000-4-4, Level 3 Burst

Output :

EN61000-4-2, Level 4 ESD

EN61000-4-4, Level 4 Burst

EN61000-4-5, Level 4 Surge

EN60950 : Meets the requirements of sections 1.5: 1.7: 2.9: 2.10.5.3: 4.2: 4.5: 4.7:



Rev. 120811

|  <b>DANGER / PELIGRO / DANGER /GEFAHR / PERICOLO / PERIGO</b>                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                        |
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| <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><b>Failure to follow these instructions will result in death or serious injury.</b></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><b>El incumplimiento de estas instrucciones puede provocar la muerte o lesiones serias.</b></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><b>De non-suivi de ces instructions provoquera la mort ou des lésions sérieuses sérieuses.</b></p> | <b>GEFAHR EINES ELEKTRISCHEN 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><b>Unterlassung dieser Anweisungen können zum Tode oder zu schweren Verletzungen führen.</b></p> | <b>RISCHIO DI SCOSSA ELETTRICA O DELL'ESPLOSIONE.</b> <ul style="list-style-type: none"> <li>Spenda 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><b>L'omissione di seguire queste istruzioni provocherà la morte o di lesioni serie</b></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><b>O não cumprimento destas instruções pode levar a morte ou lesões sérias.</b></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><b>Failure to follow these instructions can result in serious injury, or equipment damage.</b></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><b>Le non-respect de cette directive peut entraîner, des lésions corporelles graves ou des dommages matériels.</b></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><b>Die Nichtbeachtung dieser Anweisung kann Körperverletzung oder Materialschäden zur Folge haben.</b></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><b>Si no se respetan estas precauciones pueden producirse graves lesiones, daños materiales.</b></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><b>La mancata osservanza di questa precauzione può causare gravi rischi per l'incolumità personale o danni alle apparecchiature.</b></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><b>A não observância destas precauções pode provocar a morte, ferimentos graves ou danos materiais.</b></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            |