

## Series 1 240 VAC



- Crydom's signature family of solid-state relays. Ratings from 10A to 125A @ 24-280 VAC
- SCR output for heavy industrial loads
- AC or DC control
- Zero-crossing (resistive loads) or random-fire (inductive loads) output
- UL/CSA/VDE Approved, CE Compliant to EN60950-1

### PRODUCT SELECTION

Control Voltage	10A	25A	50A	75A	90A	110A	125A
3-32 VDC	D2410	D2425	D2450	D2475	D2490	D21110	D24125
90-280 VAC	A2410	A2425	A2450	A2475	A2490	A24110	A24125
18-36 VAC	A2410E	A2425E	A2450E	A2475E	A2490E	A24110E	A24125E

### AVAILABLE OPTIONS

Datasheet Directory

<b>4</b>	<b>A</b>	<b>12</b>	<b>10</b>	<b>E</b>	<b>F</b>	<b>P</b>	<b>G</b>	<b>H</b>	<b>-10</b>
<b>Output Frequency</b> Blank: 47-63 Hz 4: 400 Hz	<b>Control Voltage</b> A: AC (90-280V) D: DC (3-32V)	<b>Operating Voltage</b> 12: 24-140 VAC 24: 24-280 VAC	<b>Load Current</b> 10: 10Amps 25: 25 Amps 40: 40 Amps 50: 50 Amps	<b>Input Range</b> Blank: Standard Input E: 18-36 VAC	<b>Blank: Screw Terminals</b> F: Faston Terminals Up to 50A Models	<b>Blank: No Internal Overvoltage Protection</b> P: Internal Overvoltage Protection	<b>Blank: No Input status LED</b> G: Input status LED	<b>Blank: No Heat Transfer Pad</b> H: Heat Transfer Pad	<b>Switching Mode</b> Blank: Zero cross Turn-On -10: Random Turn-On -B: Normally Closed Output

### OUTPUT SPECIFICATIONS (1)

Description	10A	25A	50A	75A	90A	110A	125A
Operating Voltage (47-63Hz) [Vrms]	24-280	24-280	24-280	24-280	24-280	24-280	24-280
Transient Overvoltage [Vpk]	600	600	600	600	600	600	600
Maximum Off-State Leakage Current @ Rated Voltage [mArms]	10	10	10	10	10	10	10
Minimum Off-State dv/dt @ Maximum Rated Voltage [V/usec] (2)	500	500	500	500	500	500	500
Maximum Load Current (3) [Arms]	10	25	50	75	90	110	125
Minimum Load Current [mArms]	40	40	40	40	40	150	150
Maximum 1 Cycle Surge Current (50Hz) [Apk]	115	239	597	954	1145	1432	1670
Maximum 1 Cycle Surge Current (60Hz) [Apk]	120	250	625	1000	1200	1500	1750
Maximum On-State Voltage Drop @ Rated Current [Vpk]	1.6	1.6	1.6	1.6	1.6	1.7	1.7
Thermal Resistance Junction to Case (Rjc) [°C/W]	1.48	1.02	0.63	0.31	0.28	0.25	0.22
Maximum 1/2 Cycle I <sup>2</sup> t for Fusing (50Hz) [A <sup>2</sup> sec]	66	239	1779	4555	6560	10249	13950
Maximum 1/2 Cycle I <sup>2</sup> t for Fusing (60Hz) [A <sup>2</sup> sec]	60	259	1621	4150	5976	9338	12709
Minimum Power Factor (with Maximum Load)	0.5	0.5	0.5	0.5	0.5	0.5	0.5

## INPUT SPECIFICATIONS (1)

Description	( D PREFIX)	( A PREFIX)	( E SUFFIX)
Control Voltage Range	3-32 VDC	90-280 Vrms	18-36 Vrms
Maximum Reverse Voltage	-32	-	-
Maximum Turn-On Voltage	3.0 VDC (5)	90 Vrms	18 Vrms
Minimum Turn-Off Voltage	1.0 VDC	10 Vrms	4.0 Vrms
Typical Input Current	3.4-20 mA	2.0-4.0 mA	3 mA
Nominal Input Impedance [Ohms]	1500 Ohm	60 K Ohm	9.0 K Ohm
Maximum Turn-On Time [msec] (4)	1/2 Cycle	10	10
Maximum Turn-Off Time [msec]	1/2 Cycle	40	40

## 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)	3 oz (86.5g)
Encapsulation	Thermally conductive Epoxy
Terminals	Screw and saddle Clamps Furnished, mounted
Recommended Terminal Screw Torque Range:	6-32 Screws - 10 in/lbs. 8-32 & 10-32 Screws - 20 in. lbs.
Fastons:	Single pair (up to 25A) Double pair* (50A model only) *Caution: User must connect to both pairs

## GENERAL NOTES

- 1) All parameters at 25°C unless otherwise specified.
- 2) Off-State dv/dt test method per EIA/NARM standard RS-443, paragraph 13.11.1
- 3) Heat sinking required, for derating curves see page 3.
- 4) Turn-on time for Random turn-on versions is 0.02 msec (DC Control Models)
- 5) For relays with option "G" minimum control voltage is 4.5VDC

## WIRING DIAGRAM



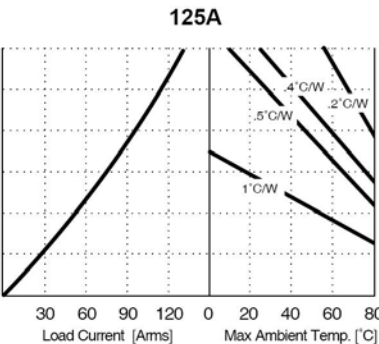
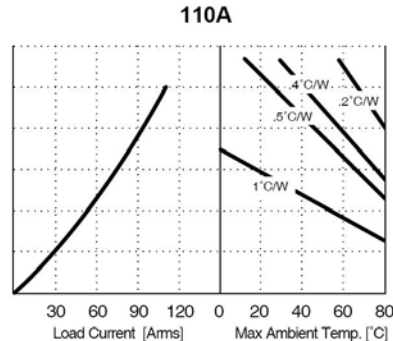
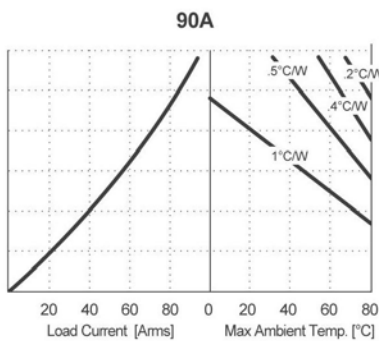
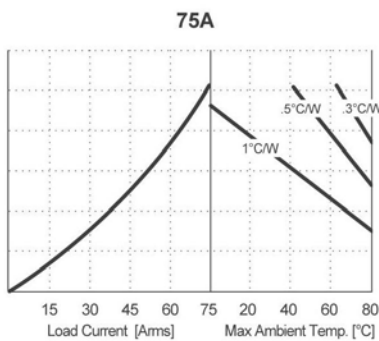
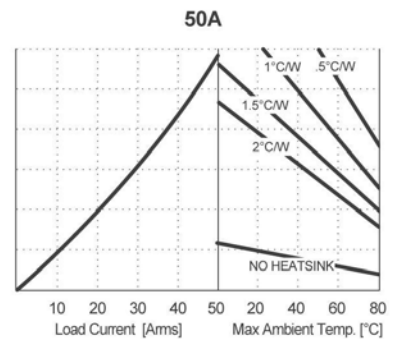
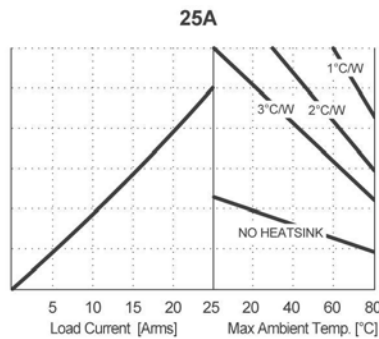
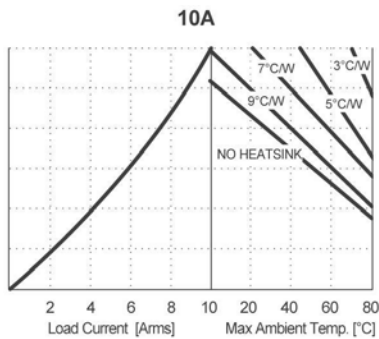
Load can be wired in location A or B



## MECHANICAL SPECIFICATIONS








**THERMAL DERATE INFORMATION**



**AGENCY APPROVALS**

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

 E116949  
  LR81689  
  10143 UG (Not Applicable: -B and 4D)

  **RoHS** Compliant

Rev. 012711

 <b>DANGER / PELIGRO / DANGER /GEFAHR / PERICOLO / PERIGO</b>					
<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 olace 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 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>	<p><b>RISCHIO DI SCOSSA ELETTRICA O DELL'ESPLOSIONE.</b></p> <ul style="list-style-type: none"> <li>• Spenga tutta l'alimentazion 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>	<p><b>RISCO DE DESCARGA ELÉTRICA OU EXPLOÇÃO</b></p> <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 à morte ou lesões sérias.</b></p>

 <b>WARNING / AVERTISSEMENT / WARNUNG /ADVERTENCIA / AVVERTENZA / AVISO</b>		
<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,</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>
<p><b>RIESGO DE DAÑOS MATERIALES Y DE SOBRECIENTAMIENTO 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>RISCO DE DANO MATERIAL E DE AQUECIMENTO</b></p> <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	○	○	○	○	○
Solder	X	○	○	○	○	○

此附件所标示的包括电子信息产品污染图标的环保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	○	○	○	○	○
焊接点	X	○	○	○	○	○