

## 53TP Series IP20

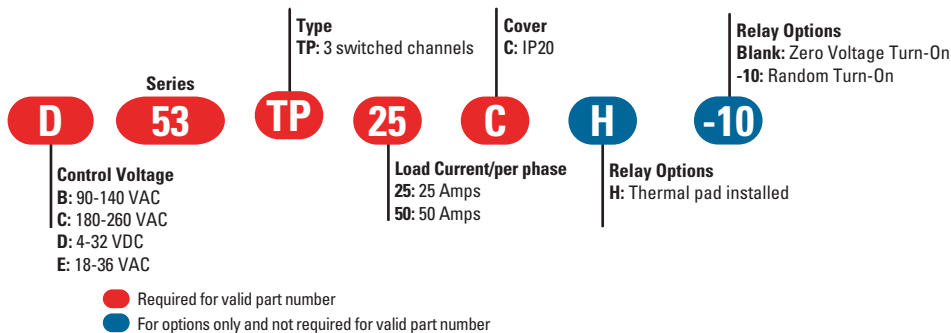


- Three-phase solid-state relay; Ratings 25 A, 50 A per phase @ 48-530 VAC
- 2 package styles IP20 or IP00 (See IP00 spec sheet for more information)
- SCR output for heavy industrial loads
- AC or DC control
- Zero-crossing (resistive loads) or random-fire (inductive loads) output
- LED input status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

### PRODUCT SELECTION

Control Voltage	25 A	50 A
90-140 VAC	B53TP25C	B53TP50C
80-260 VAC	C53TP25C	C53TP50C
4-32 VDC	D53TP25C	D53TP50C
18-36 VAC	E53TP25C	E53TP50C

### AVAILABLE OPTIONS



### OUTPUT SPECIFICATIONS <sup>(1)</sup>

Description	25 A	50 A
Operating Voltage (47-63Hz) [Vrms]	48-530	48-530
Transient Overvoltage [Vpk] <sup>(2)</sup>	1200	1200
Maximum Off-State Leakage Current @ Rated Voltage [mAmps]	3	3
Minimum Off-State dv/dt @ Maximum Rated Voltage [V/μsec] <sup>(2)</sup>	500	500
Maximum Load Current [Amps] <sup>(3)</sup>	25	50
Minimum Load Current [Amps]	0.1	0.1
Maximum 1 Cycle Surge Current (50/60Hz) [Apk]	275/300	710/750
Maximum 1 Second Surge Current 50/60 Hz [Apk]	85	150
Maximum On-State Voltage Drop @ Rated Current [Vpk]	1.35	1.35
Thermal Resistance Junction to Case (Rjc) [°C/W]	0.24	0.12
Maximum 1/2 Cycle I <sup>2</sup> t for Fusing (50/60 Hz) [A <sup>2</sup> sec]	380/370	2520/2320
Minimum Power Factor (with Maximum Load)	0.5	0.5
UL/IEC 60947 Motor Control Ratings at 120V [HP/KW] <sup>(4)</sup>	0.75/0.56	1.5/1.11
UL/IEC 60947 Motor Control Ratings at 240V [HP/KW] <sup>(4)</sup>	1/0.74	3/2.22
UL/IEC 60947 Motor Control Ratings at 380V [HP/KW] <sup>(4)</sup>	2/1.48	5/3.7
UL/IEC 60947 Motor Control Ratings at 480V [HP/KW] <sup>(4)</sup>	3/2.22	7.5/5.55

**INPUT SPECIFICATIONS (1)**

Description	D53	B53	C53	E53
Control Voltage Range	4-32 VDC	90-140 VDC	180-260 Vrms	18-36 VAC
Minimum Turn-On Voltage	4.0 VDC	90	180	18
Minimum Turn-Off Voltage	1.0 VDC	10	10	2
Minimum Input Current (for on-state)	24 mA	7.0 mA	7.0 mA	15 mA
Maximum Input Current	35 mA	16 mA	20 mA	20 mA
Nominal Input Impedance	Current Regulated	Current Regulated	Current Regulated	Current Regulated
Maximum Turn-On Time [msec] (5)	8.33	20	20	20
Maximum Turn-Off Time [msec]	8.33	30	30	30

**GENERAL SPECIFICATIONS (1)**

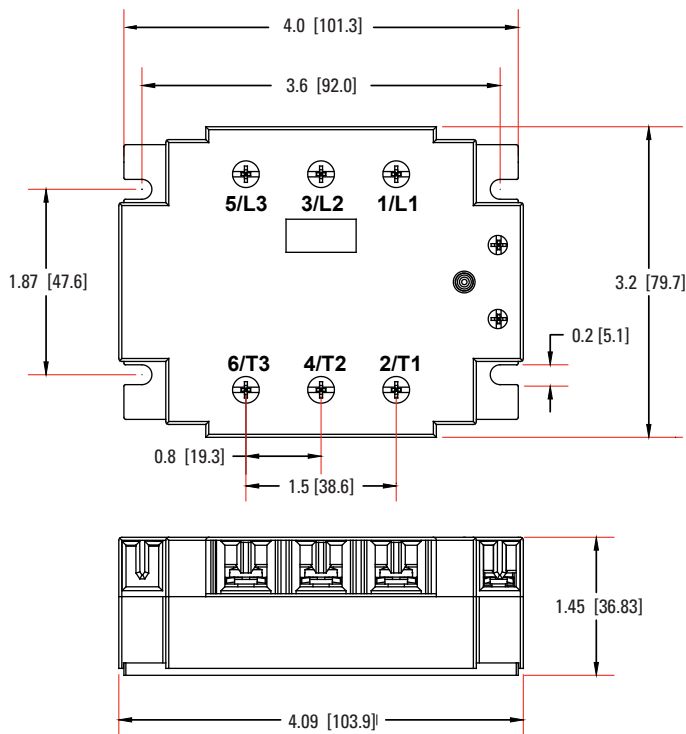
Description	Parameters
Dielectric Strength, Input/Output/Base (50/60Hz)	4000 Vrms
Minimum Insulation Resistance (@ 500 V DC)	10 <sup>9</sup> Ohms
Maximum Capacitance, Input/Output	8 pF
Ambient Operating Temperature Range	-40°C to 80°C
Ambient Storage Temperature Range	-40°C to 125°C
Weight (typical)	13.1 oz (370g)
Encapsulation	NA
Terminals	Hardware Furnished, mounted
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) Off-State dv/dt test method per EIA/NARM standard RS-443, paragraph 13.11.1
- 3) Heat sinking required, see page 3 for derating curves.
- 4) At 40°C Ambient temperature.
- 5) Turn-on time for Random turn-on versions is 0.02 msec (DC Control Models)

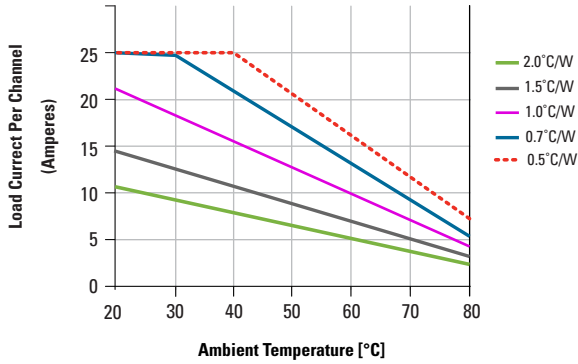
**MECHANICAL SPECIFICATIONS**

Tolerances: ±0.02 in / 0.5 mm  
 All dimensions are in: inches [millimeters]

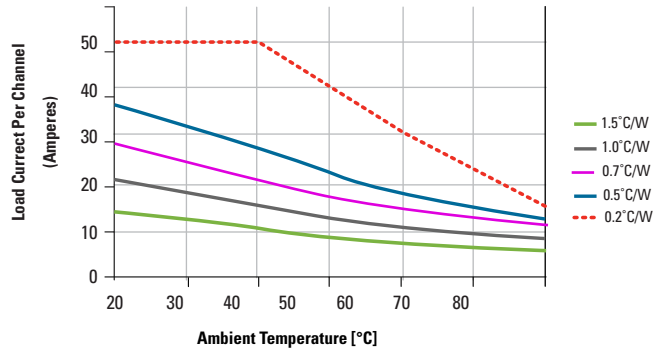


**THERMAL DERATE INFORMATION**

**DERATE CURVES:**  
53TP IP20 25A



**DERATE CURVES:**  
53TP IP20 50A



**AGENCY APPROVALS**

**Agency Approvals**

Designed in accordance with the requirements of IEC 62314  
 EN60950 : Meets the requirements of sections 1.5: 1.7: 2.9: 2.10.5.3: 4.2: 4.5: 4.7:  
 IEC 62314  
 IEC 60068-2-6 35mm / 10-55Hz  
 IEC 60068-2-27 15G / 11ms  
 IEC 1000-4-2 : Electrostatic Discharge – Level 3  
 IEC 1000-4-3 : Radiated Electromagnetic Noise – Level 3  
 IEC 1000-4-4 : Electrically Fast Transients – Level 3  
 IEC 1000-4-5 : Electrical Surges – Level 3  
 IEC 1000-4-6 : Conducted Electromagnetic Noise – Level 3



Rev. 062316

**⚠ DANGER / PELIGRO / DANGER /GEFAHR / PERICOLO / 危险**

<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.</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 che 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,</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 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>

**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	○	○	○	○	○

附件 – 环保信息

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	○	○	○	○	○



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