



## 53TP SERIES | IP00

PANEL MOUNT



### Features

- Three-phase solid-state relay; Ratings 25 A, 50 A 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	25 A	50 A
90-280 VAC	A53TP25D	A53TP50D
4-32 VDC	D 53TP25D	D53TP50D



### SPECIFICATIONS

#### AC Output <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 [mArms]	10	10
Minimum Off-State dv/dt @ Maximum Rated Voltage [V/sec] <sup>3</sup>	500	500
Maximum Load Current [Arms] <sup>4</sup>	25	50
Minimum Load Current [Arms]	0.05	0.05
Maximum Surge Current 50-60 Hz (16.6ms) [Apk]	239/250	597/625
Maximum On-State Voltage Drop @ Rated Current [Vpk]	1.6	1.6
Thermal Resistance Junction to Case (Rjc) [°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 <sup>(1)</sup>

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

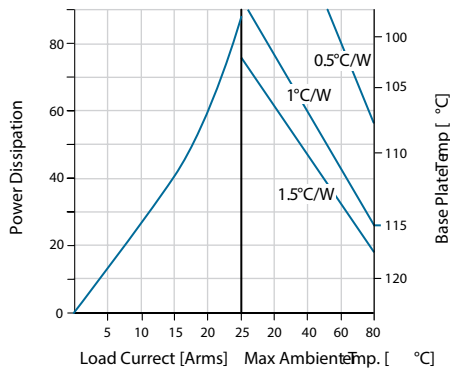
## General <sup>(1)</sup>

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

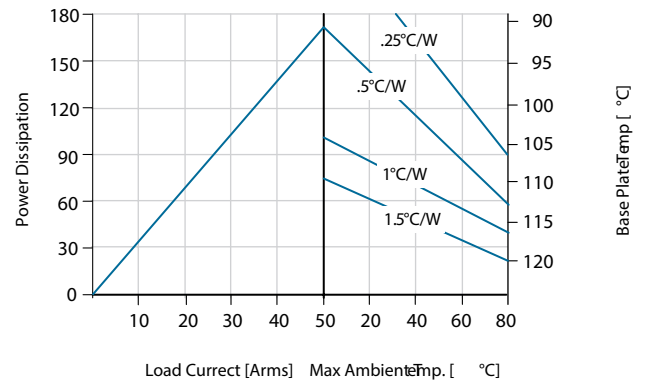


## THERMAL DERATE INFORMATION

A53TP25D, D53TP25D

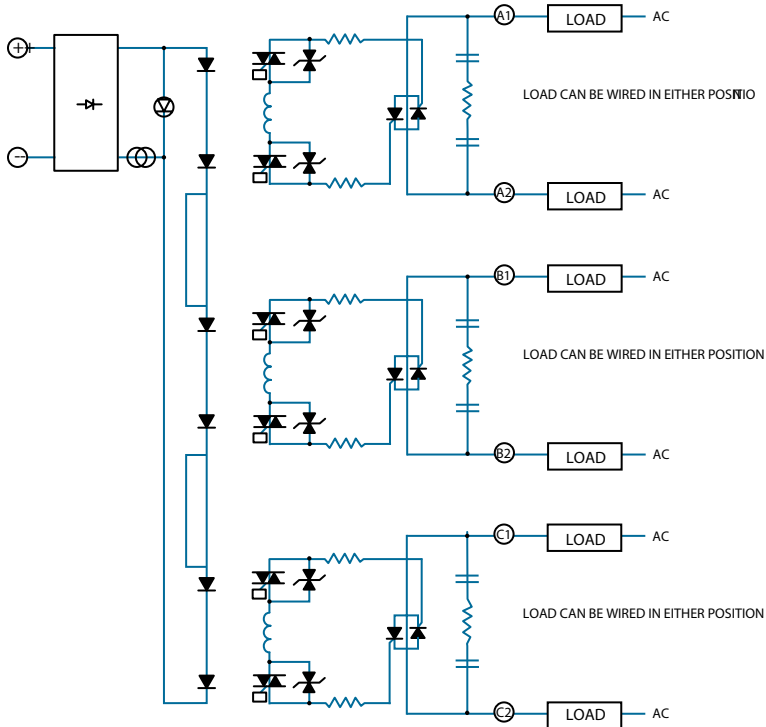


D53TP50D, D53TP50D





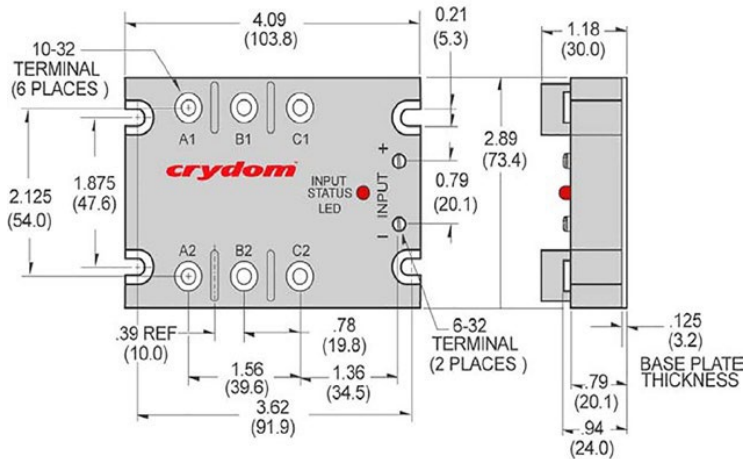
## WIRING DIAGRAM



## MECHANICAL SPECIFICATIONS

Tolerances:  $\pm 0.02$  in / 0.5 mm

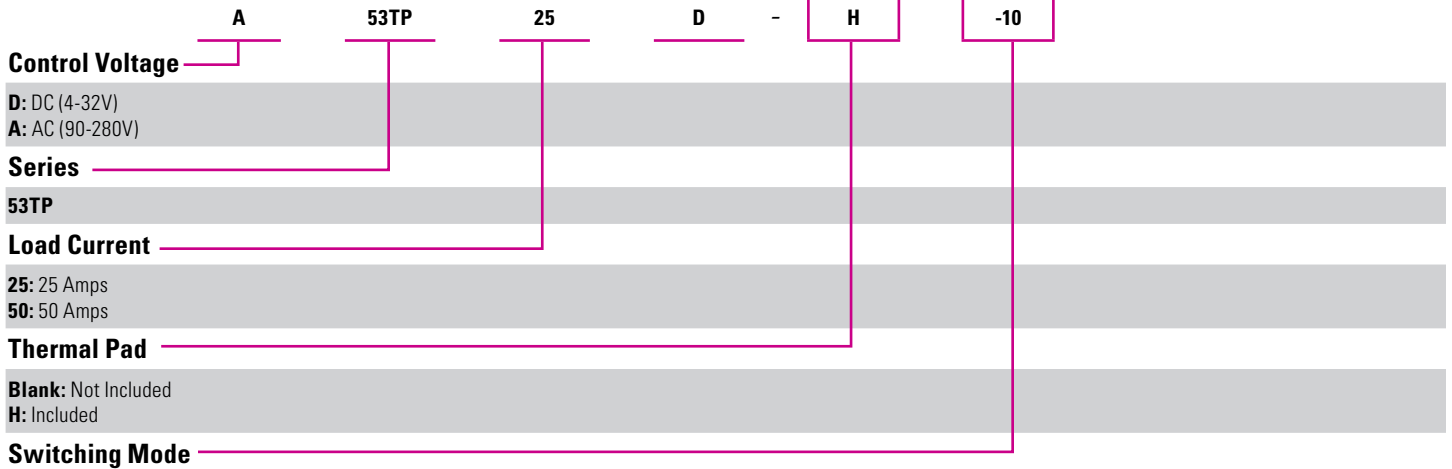
All dimensions are in: inches [millimeters]





## ORDERING OPTIONS

Example : A53TP25D-H-10



— Required for valid part number  
 □ For options only and not required for valid part



## 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)



## AGENCY APPROVALS & CERTIFICATIONS

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:



## WARNINGS



### RISK OF MATERIAL DAMAGE AND HOT ENCLOSURE

- The product's side panels may be hot, allow the product to cool before touching
- Follow proper mounting instructions including torque values
- Do not allow liquids or foreign objects to enter this product

**Failure to follow these instructions can result in serious injury, or equipment damage.**



### HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Disconnect all power before installing or working with this equipment
- Verify all connections and replace all covers before turning on power

**Failure to follow these instructions will result in death or serious injury.**

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