

# 645S Series - Solid State On / Off

## 10 - 75 Amp



The 645S series of solid state relays uses back to back SCRs for on/control of three phase loads. Operation is three pole normally open. Inputs can be AC or DC operated. Load currents can range from 10 to 75 amps and up to a nominal voltage of 480VAC. Both random turn on or zero cross construction is available.



### GENERAL SPECIFICATIONS (@ 25° C)

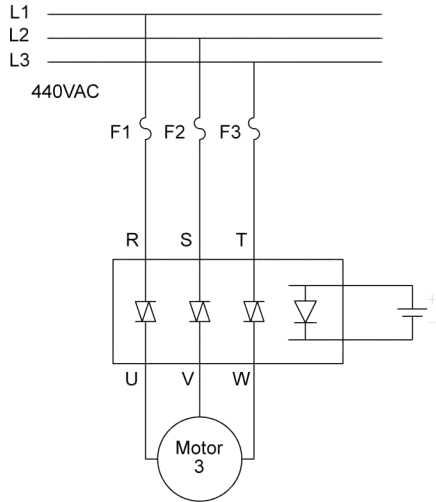
Input Characteristics	DC Input	AC Input
Input Voltage	3 - 32VDC	90 - 280 VAC
Must Release Voltage	1VDC	10VAC
Maximum Input Current	80mA	30 mA
Reverse Polarity Protection	Yes	N/A

Output Characteristics	10 Amp	25 Amp	40 Amp	50 Amp	75 Amp
Rated Load Current (rms)	10A	25A	40A	50A	75A
Min. Load current to maintain on	100mA	120mA	250mA	250mA	250mA
Non-Repetitive Surge Current (1 cycle)	80A	80A	800A	520A	1150A
Maximum I <sup>2</sup> T for Fusing (Asquared sec)	41A <sup>2</sup> S	510A <sup>2</sup> S	3745A <sup>2</sup> S	1035A <sup>2</sup> S	2600A <sup>2</sup> S
Suggested Heatsink °C/W	1.0°C/W	0.14°C/W	0.14°C/W+FAN	0.14°C/W+FAN(2)	0.14°C/W+FAN(2)
Load Voltage Range	50 to 480VAC	50 to 480VAC	50 to 480VAC	50 to 480VAC	50 to 480VAC
Frequency Range	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz
Peak Blocking Voltage	800 to 1200	800 to 1200	800 to 1200	800 to 1200	800 to 1200
Maximum Rate of Rise	250V/uS	300V/uS	475V/uS	500V/uS	500V/uS
Off State Voltage (dv/dt)					
Max. Off state leakage current (rms)	10mA	10mA	10mA	10mA	10mA
Max. On State Voltage Drop	1.6VAC	1.6VAC	1.6VAC	1.8VAC	1.8VAC
Maximum Turn-On Time @ 60 Hz	8.3mS	8.3mS	8.3mS	8.3mS	8.3mS
Maximum Turn-Off Time @ 60 Hz	8.3mS	8.3mS	8.3mS	8.3mS	8.3mS

Miscellaneous Characteristics	
Dielectric Strength - I or O to case	4000Vrms
Operating Temperature Range	-30 to 80°C
Storage Temperature Range	-40 to 100°C
Weight	320g
Input Terminal Size	M3.5
Output Terminal Size	M4

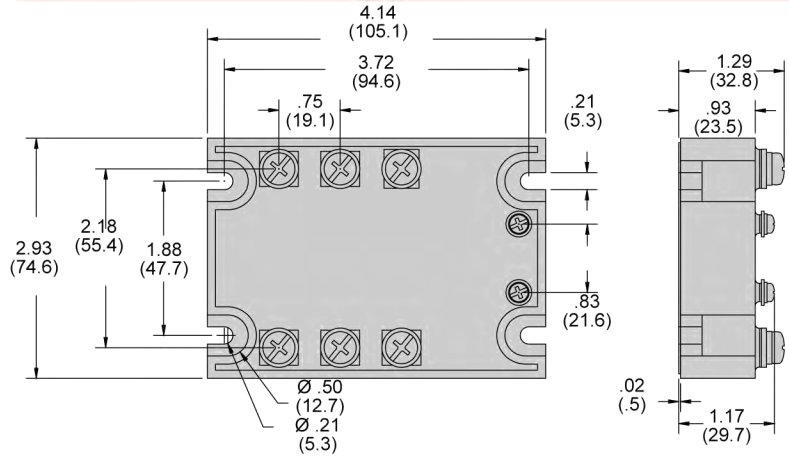
# Motor Relays 15 - 75 Amp

**Solid State On/Off Wire Diagram**



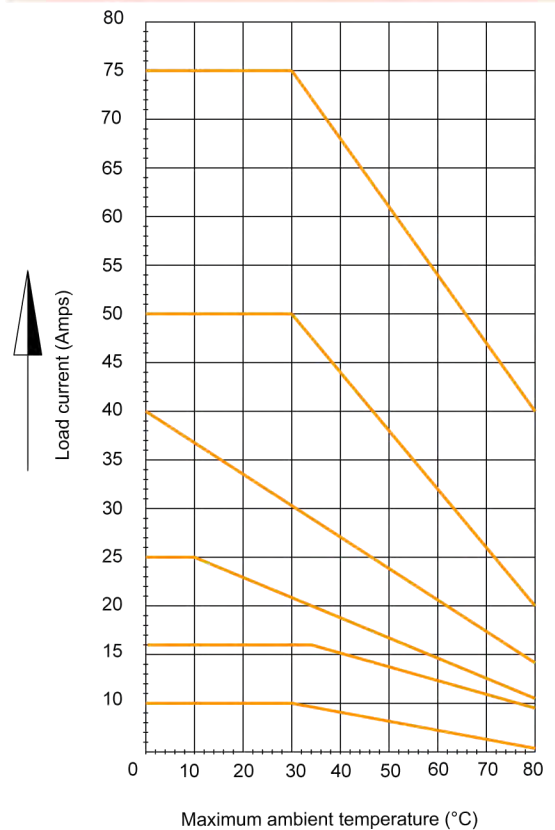
**Outline Dimensions**

Dimensions Shown in inches & (millimeters)



Section 3

**Derating Curve**



**Ordering Code** 645 S Z or R 4 10 3-32VDC

**Series**  
645

**Switching**  
SCR - CODE S

**Turn on**  
Zero cross - CODE Z  
Random turn on CODE R

**Load Voltage**  
480VAC - CODE 4

**Maximum Load Current**  
10, 25, 40, 50, 75 (Amp)

**Input Voltage**  
3-32VDC  
90-280VAC