

SSR3 SERIES

POTTER & BRUMFIELD THREE PHASE SOLID STATE RELAY

TE Connectivity (TE's) Potter & Brumfield Solid-state relays (SSR) comes with compact, space saving solution. SSR3 series will add a three phase relay option to our SSR range of products, which is three individual single phase solid state relays packaged in a single housing, having a common input (AC/DC), to energize each SSR simultaneously. With load ratings ranging from 10 to 75 Amps @ 480Vac.

FEATURES

- LED indicator
- SCR output for medium to high industrial loads
- TRIAC output for low industrial loads
- 10, 16, 25, 40, 50 & 75 Arms
- 48-480Vac output types
- Zero voltage and random voltage turn-on versions
- AC & DC input versions
- 4000V rms optical isolation
- Safety cover to meet IP 20 protection
- Epoxy filled
- Transient voltage protection by MOVs externally
- Panel mountable

APPLICATIONS

- Industrial control
- Automation
- Conveyor belt
- Elevator
- Warehouse equipment
- Plastic inject machine



APPROVALS

- UL : File E29244
- CE & UK CA : N84_00003



Users should thoroughly review the technical data before selecting a product part number. It is recommended that users also seek out the pertinent approvals files of the agencies/laboratories and review them to ensure the product meets the requirements for a given application

POTTER & BRUMFIELD

Three Phase Solid State Relay

ENGINEERING DATA

Isolation	4000V _{rms} minimum
Temperature range	
Storage	-30°C to +100°C
Operating Temperature	-30°C to + 80°C
Case material	Plastic, UL rated 94V-0
Case and mounting	Refer to outline dimension
Termination	Refer to outline dimension
Approximate weight	16.3-18.4 oz. (461-521g) (Depending on the specific model)

INPUT SPECIFICATIONS

Characteristics	Units	AC Input	DC Input
		Zero & Random V Turn-on	Zero & Random V Turn-on
Control voltage range	V _{IN}	90 - 280	4 - 32
Must operate voltage	V _{IN(OP)}	90	4
Must release voltage	V _{IN(REL)}	10	1
Input current	mA	9-25	30-80
Max input current @ rated voltage	mA	25 @ 280V _{AC}	80 @ 32V _{DC}

OUTPUT SPECIFICATION (@ 25°C, UNLESS OTHERWISE SPECIFIED)

Characteristics	Conditions	Units	10A Models	16A Models	25A Models
Load Voltage Range, V _L		V _{RMS}	48-480		
Load Current Range, I _L		A	10	16	25
On-State Voltage Drop	@ Rated Current	V _{RMS}	1.6		
Single cycle surge current	For Triac / SCR	A	100	160	250
Peak Off state Voltage		V _{AC}	800		
Off- State Leakage Current	(F-60 Hz)	mA	5		
Fusing Current, I ² T Rating	For Triac / SCR	A ² s	55	144	340
Static dv/dt (Off-State)	For Triac / SCR	V/μs	400		500
Zero Turn-On Voltage		V _{pk}	25		
Thermal Resistance, (Junction to Case, R _{J-C})	For Triac / SCR	°C/W	2.4	2.1	0.6 (AC i/p & Random), 0.9 (DC i/p)
Turn-On Time (F= 60/50 Hz)	AC i/p	ms	40		
	DC i/p		Zero - 10/8.3, Random - 0.1		
Turn-Off Time (F= 60/50 Hz)	AC i/p		80		
	DC i/p		Zero - 10/8.3, Random - 10		

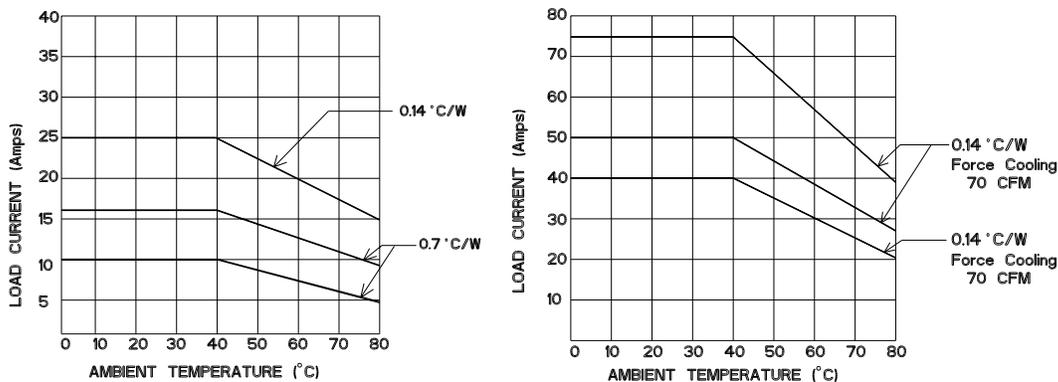
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Three Phase Solid State Relay

Characteristics	Conditions	Units	40A Models	50A Models	75A Models
Load Voltage Range, V_L		V_{RMS}	48-480		
Load Current Range, I_L^*		A	40	50	75
On-State Voltage Drop	@ Rated Current	V_{RMS}	1.6		
Single cycle surge current	For Triac / SCR	A	400 / 580	520	750
Peak Off state Voltage		V_{AC}	800		
Off- State Leakage Current	(F-60 Hz)	mA	5		
Fusing Current, I ² T Rating	For Triac / SCR	A ² s	880 / 1680	1350	2812
Static dv/dt (Off-State)	For Triac / SCR	V/ μ s	500 / 1000	1000	
Zero Turn-On Voltage		V_{pk}	25		
Thermal Resistance, (Junction to Case, R_{J-C})	For Triac / SCR	$^{\circ}C/W$	0.6 / 0.9	0.6 / 0.5	0.6
Turn-On Time (F= 60/50 Hz)	AC i/p	ms	40		
	DC i/p		Zero - 10/8.3, Random - 0.1		
Turn-Off Time (F= 60/50 Hz)	AC i/p		80		
	DC i/p		Zero - 10/8.3, Random -10		

* See derating curve

ELECTRICAL CHARACTERISTICS (THERMAL DERATING CURVES)



HEATSINK RECOMMENDATIONS

- We recommend that solid state relay modules be mounted to a heatsink sufficient to maintain the module's base temperature at less than 85°C under worst case ambient temperature and load conditions.
- The heatsink mounting surface should be a smooth (30-40 micro-inch finish), flat (30-40 micro-inch flatness across mating area), un-painted surface which is clean and free of oxidation.
- An even coating of thermal compound (Dow Corning DC340 or equivalent) should be applied to both the heatsink and module mounting surfaces and spread to a uniform depth of .002" to eliminate all air pockets.
- The module should be mounted to the heatsink using two #8 screws.

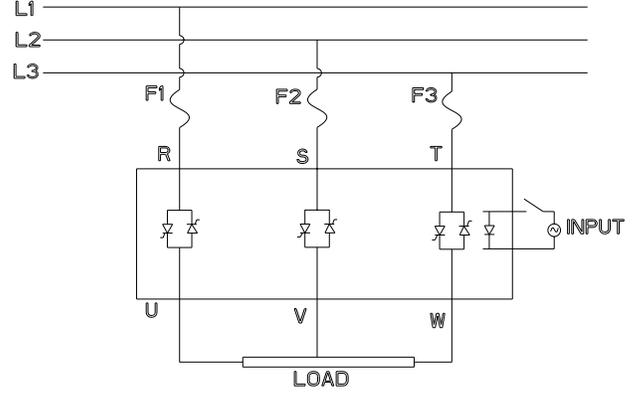
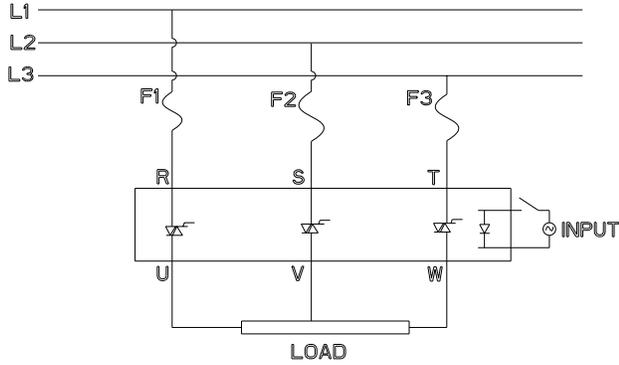
THERMAL PAD

- Product Code : SSR-ACC-TH-003
- Part Number : 2323803-2

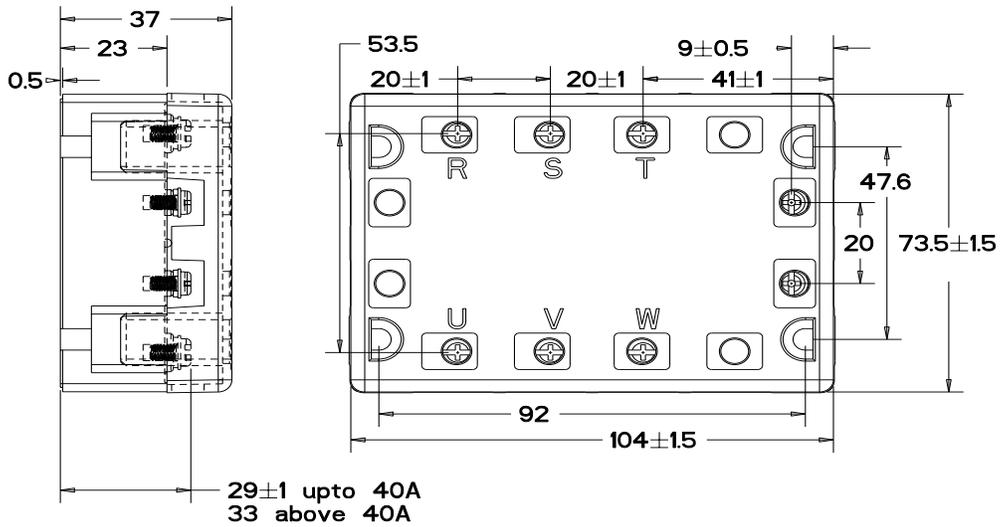
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Three Phase Solid State Relay

OPERATING DIAGRAMS



OUTLINE DIMENSIONS



Unspecified dimension tolerance			
0≤6	>6≤30	>30≤120	>120≤320
±0.15	±0.25	±0.65	±1.00

Screw details

Type	Screw size	Ampere	Head type
Input	M3.5/0.6	As per data sheet	Pan head Phillips
Output	M4/0.7	up to 40A	
	M6/1	50A & above	

Note:

- Overall height dimensions includes with clear cover.
- All dimensions are in mm.

ORDERING INFORMATION

Typical Part Number
SSR3 S -480 D 75 R

Basic Series

SSR3	Three phase solid state relay
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Switching

S	SCR Output
T	TRIAC Output

Line Voltage

480	48 - 480
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Input type & Voltage

A	90 - 280VAC
D	4 - 32VDC

Other types on request

Turn-On Options

Blank	Zero voltage turn-on
R	Random voltage turn-on

Maximum Current Rating

10	0.1-10A rms, mounted to heatsink
16	0.1-16A rms, mounted to heatsink
25	0.1-25A rms, mounted to heatsink
40	0.1-40A rms, mounted to heatsink
50	0.1-50A rms, mounted to heatsink
75	0.1-75A rms, mounted to heatsink

PART NUMBER LIST

Product Code	TE Part Number
SSR3T-480A10	2345984-1
SSR3T-480A16	2345984-2
SSR3T-480A25	2345984-5
SSR3T-480A40	2345984-6
SSR3S-480A40	2345984-7
SSR3S-480A50	2345984-8

Product Code	TE Part Number
SSR3S-480A75	2345984-9
SSR3T-480D10	1-2345984-1
SSR3T-480D16	1-2345984-2
SSR3T-480D25	1-2345984-3
SSR3T-480D40	1-2345984-4
SSR3S-480D40	1-2345984-5

Product Code	TE Part Number
SSR3S-480D50	1-2345984-6
SSR3S-480D75	1-2345984-7
SSR3T-480D10R	1-2345984-9
SSR3T-480D25R	2-2345984-0
SSR3S-480D40R	2-2345984-1
SSR3S-480D50R	2-2345984-2

OUR AUTHORIZED DISTRIBUTORS ARE MORE LIKELY TO MAINTAIN THE FOLLOWING ITEMS IN STOCK FOR IMMEDIATE DELIVERY.

Product Code	
SSR3T-480A10	SSR3T-480D25
SSR3T-480A16	SSR3T-480D40
SSR3T-480A25	SSR3T-480D10R
SSR3S-480A50	SSR3S-480D50R

Notes:

- Catalog and product specification according to IEC 61810-1 and to be used only together with the 'Definitions' section.
- Catalog and product data is subject to the terms of the disclaimer and all chapters of the 'Definitions' section, available at <http://relays.te.com/definitions>
- Catalog product data, 'Definitions' section, application notes and all specifications are subject to change.
- To view solid-state relay application notes [click here](#)

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