POTTER & BRUMFIELD SOLID STATE RELAY

SSRK SERIES
10-30A DIN Mount Solid State Relay With Paired SCR Output, Integral Heatsink

INTRODUCTION

TE Connectivity (TE)'s Potter & Brumfield Solid-State Relays (SSR) feature a narrow 22.5mm DIN rail mount with an integral heat sink. These relays support a universal input (AC/DC) and offer load ratings from 10 to 30 amps at 240 to 660 VAC.



FEATURES

- Narrow (22.5 mm), DIN mount design with integral heatsink
- Choice of 10, 20 or 30 Arms inverse-parallel connected SCR output
- 24-240 VAC and 48-660 VAC output types
- 3 - 32 VDC, 4 - 32 VDC or 90 - 280 Vrms input control
- 4000 Vrms optical isolation
- Green LED input status indicator
- Finger-safe (IP20) screw clamp terminals for load and control
- B-to-B SCR and Snubber circuit
- Zero Turn-ON voltage
- Ground terminal

APPROVALS

- File E29244

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.

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ENGINEERING DATA

Form	1 Form A (SPST-NO)
Duty	Continuous
Isolation	4000 Vrms input-to-output-to-ground.
Insulation Resistance	10^9 Ohms, minimum, at 500VDC.
Capacitance	8.0 pf maximum (input to output).
Temperature Range	
Storage	–30 °C to +100 °C
Operating	–30 °C to + 80 °C
Case and Mounting	Refer to outline dimension drawing
Termination	
Load & Control	Finger safe (IP20) screw clamps accepting wire size up to #10 AWG (3 mm)
Ground	#10 screw with 5/16 in. hex/slottted head
Installation Spacing	Minimum 0.8 in (20 mm) space between units
Approximate Weight	9.87 oz. (280g)

INPUT SPECIFICATIONS

Parameter	Conditions	AC Control Units	DC Control Units	
			240 V	600V
Control Voltage Range V_{IN}	@ 25 °C	90 - 280 Vrms	3 -32 VDC	4 -32 VDC
Must Operate Voltage V_{IN}(OP) (Min.)	@ 25 °C	90 Vrms	3 VDC	4 VDC
Must release Voltage V_{IN}(REL) (Min.)	@ 25 °C	10 Vrms	1 VDC	1 VDC
Input Current Range (Typ.)	@ 25 °C	7.5 mA @ 120 Vrms, 16 mA @ 240 Vrms	18 mA @ 5 Vdc	9.5 - 30 mA

OUTPUT SPECIFICATIONS (@ +25 ˚C unless otherwise specified)

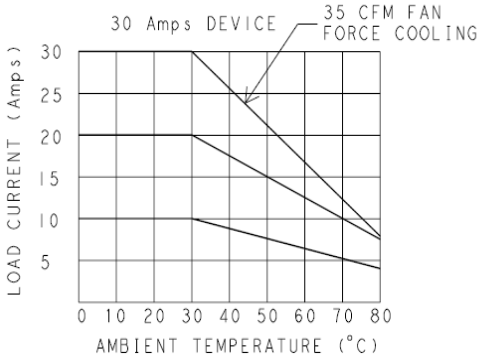
Parameter	Conditions	Nom. Line Voltage	10A Rated Units	20A Rated Units	30A Rated Units
Load voltage V_L	f = 47 - 63 Hz	240 V model	24 - 240 Vrms	24 - 240 Vrms	24 - 240 Vrms
		600 V model	48 - 660 Vrms	48 - 660 Vrms	48 - 660 Vrms
Repetitive blocking voltage (Min.)		240 V model	600 Vpeak	600 Vpeak	600 Vpeak
		600 V model	1200 Vpeak	1200 Vpeak	1200 Vpeak
Load current I_L*		240 V & 600 V model	0.15 - 10 Arms	0.15 - 20 Arms	0.15 - 30 Arms
Single cycle surge current (Min.)		240 V model	83 Arms	300 Arms	800 Arms
		600 V model	300 Apeak	300 Apeak	800 Apeak
Leakage current (Off-state) (Max.)	f = 60Hz. $-V_L$ = 600Vrms	240 V & 600 V model	5 mArms	5 mArms	5 mArms
On-State voltage drop (Max.)	I_L=Max.	240 V model	1.8 Vpeak	1.8 Vpeak	1.8 Vpeak
		600 V model	1.6 Vpeak	1.6 Vpeak	1.8 Vpeak
Static dv / dt (Off-state) (Min.)	V_L=Max.	240 V model	200 V/µs	300 V/µs	500 V/µs
		600 V model	300 V/µs	300 V/µs	500 V/µs

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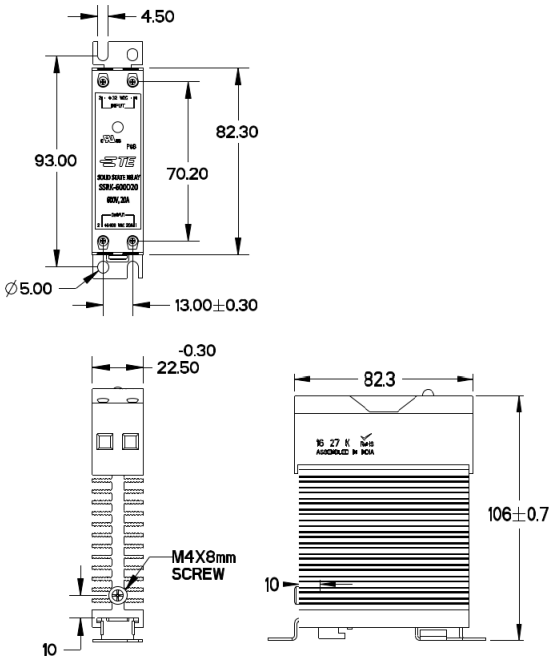
OUTPUT SPECIFICATIONS (@ +25 ˚C unless otherwise specified)

Parameter	Conditions	Nom. Line Voltage	10A Rated Units	20A Rated Units	30A Rated Units
Turn-On Time (Max.)	f = 60Hz.	240 V & 600 V model	10 ms for DC Input Models, 40 ms for AC Input Models		
Turn-Off Time (Max.)		240 V & 600 V model	10 ms for DC Input Models, 80 ms for AC Input Models		
I^2t Rating (Max.)	t = 8.3 ms	240 V model	41 A^2s	510 A^2s	3745 A^2s
		600 V model	510 A^2s	510 A^2s	3745 A^2s
Load Power Factor Rating (Min.)	I_L=Min.	240 V & 600 V model	0.5	0.5	0.5

ELECTRICAL CHARACTERISTICS (THERMAL DERATING CURVES)



OUTLINE DIMENSIONS (Unit:mm)



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ORDERING INFORMATION

Part Number
SSRK –600 A 30

Series

SSRK	Slim Solid State Relay with Integral Heatsink for DIN Rail Mounting

Line Voltage

240	24 - 240 VAC
600	48 - 660 VAC

Maximum Switching Rating / Output

10	10.0 Arms
20	20.0 Arms
30	30.0 Arms

Input Type & Voltage

A	90 - 280 VAC
D	3 - 32VDC for 240V / 4 - 32VDC for 600V

PRODUCT INFORMATION

Product Code	Part Number
SSRK-600A10	6-1393030-9
SSRK-600A20	7-1393030-0
SSRK-600A30*	7-1393030-1
SSRK-600D10	6-1393030-6
SSRK-600D20	6-1393030-7
SSRK-600D30*	6-1393030-8
SSRK-240A10	4-1393030-8
SSRK-240A20*	9-1393030-0
SSRK-240A30*	9-1393030-1
SSRK-240D10	9-1393030-2
SSRK-240D20*	9-1393030-3
SSRK-240D30*	9-1393030-4

*Our authorized distributors are more likely to maintain the following items in stock for immediate delivery.

To view Solid-State relay application notes **click here**

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