



## Features

- Nano-second response to transients
- Sneak current protection
- Solid brass gold plated pins
- Designed to Telcordia and RUS standards
- (UL) Listing per UL497 (File E53117)

## Applications

- Central Office
- Remote cabinet
- Building entrance terminal

## F Series 5-Pin Solid-State Overcurrent Surge Protectors

Bourns® solid-state 5-pin protector modules are designed to protect personnel and equipment from damage caused by excessive voltages and currents induced on telephone lines by lightning and AC power system faults. The solid-state protectors incorporate a fast semiconductor switch with operating voltage nearly independent of transient rise time. The module's fast, repeatable operation is designed to protect excellent equipment protection and long protection life. A fail-short mechanism operates under high current power-cross conditions to permanently short the line to ground. Heat coils provide overcurrent (sneak current) protection in 4 ohm and 20 ohm versions. The industry-standard 5-pin base makes the modules interchangeable with existing 5-pin modules. The pins are available with gold or tin plating. The protectors have a detent position which disconnects the equipment side but leaves the module connected to the line side. Test points on the line side are optional.

Bourns® 5-pin protectors are used in many Central Office applications. These modules are a superior choice for 5-pin protection of copper pair circuits.

### Characteristics @ 20 °C, ±5 °C

	<b>240 V</b>	<b>300 V</b>
DC Breakdown Voltage (1 mA).....	200 V min.....	265 V min.
AC Breakdown (60 Hz).....	265 V max.....	400 V max.
Impulse Breakdown		
100 V/μs .....	<350 V .....	<400 V
1000 V/μs .....	<350 V .....	<400 V
Insulation Resistance @ 50 Vdc .....	100 MΩ min.	
Insulation Resistance @ 200 Vdc .....	100 MΩ min.	
DC Holdover .....	<30 ms max. with 25 A (10/1000 μs) surge	
	@260 mA and ± 52 Vdc	
	@200 mA and ± 135 Vdc	
	@140 mA and ± 150 Vdc	
Service life.....	10 A for 1 sec, 10 surges, 60 Hz, 480 V	
	±10 A (10 x1000 μs) unlimited >3000 surges	
	±100 A (10 x1000 μs) unlimited > 3000 surges	
	±10,000 A (8 x 20 μs) fail-short	
Capacitance.....	Line to Ground, <100 pF @ 50 Vdc, 1 Vac, 1 Khz	
	Line to Ground, <200 pF @ 0 Vdc, 1 Vac, 1 Khz to 1 Mhz	
	Tip to Ring – imbalance <15 pF	
Response Time.....	<20 nanoseconds	
Power Cross Operation @60 Hz, rms .....	Fail-Short 5 A for 15 minutes	
	Fail-Short 10 A for 15 minutes	
	Fail-Short 30 A for 15 minutes	
	Fail-Short 60 A for 3 seconds	
	Fail-Short 120 A for 0.6 seconds	
	Fail-Short 350 A for 0.04 seconds	
Storage and Operating Temperature .....	-40 to +65 °C	
Sneak Current Characteristics.....	4 ohm heat coil will carry 350 mA for a minimum of 3 hours	
	Will short to ground within 210 seconds at 540 mA	
	Will short to ground within 10 seconds at 1 A	
	Resistance 3.6 to 4.0 ohms	
	20 ohm heat coil will carry 150 mA for a minimum of 3 hours	
	Will short to ground within 210 seconds at 250 mA	
	Resistance 21 ohms maximum	
	PBX Battery will carry 1.2 A for a minimum of 3 hours	
	Will short to ground within 210 seconds at 1.875 A	
	Resistance 0.3 ohms maximum	



**WARNING** Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

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## F Series 5-Pin Solid-State Overcurrent Surge Protectors

**BOURNS®**

### How to Order

Catalog Number	Part Number	Color	Test Points	Heat Coil	Service
<b>240 Volt modules with 4 Ohm Heat Coil</b>					
S4ABF	F013616	Black	No	4 Ohm	Standard
R4B1FS	F013593	Black	No	4 Ohm	Standard
R4C1FS	F013598	Black	Yes	4 Ohm	Standard
R4B2FS	F013594	Green	No	N/A	Denial (no heat coil)
R4C2FS	F013599	Green	Yes	N/A	Denial (no heat coil)
S4ARF	F013617	Red	No	4 Ohm	Special
R4B3FS	F013595	Red	No	4 Ohm	Special
R4C3FS	F013600	Red	Yes	4 Ohm	Special
R4B4FS	F013597	Yellow	No	.25 Ohm	PBX Battery
R4C4FS	F013601	Yellow	Yes	.25 Ohm	PBX Battery
R4B9FS	F013596	White	No	4 Ohm	T/R Reverse
R4C9FS	F013602	White	Yes	4 Ohm	T/R Reverse
<b>240 Volt modules with 20 Ohm Heat Coil</b>					
ST4ABF	F013629	Black	No	20 Ohm	Standard
RT4B1FS	F013378	Black	No	20 Ohm	Standard
RT4C1FS	F013370	Black	Yes	20 Ohm	Standard
RT4B2FS	F013384	Green	No	N/A	Denial (no heat coil)
RT4C2FS	F013376	Green	Yes	N/A	Denial (no heat coil)
RT4B3FS	F013380	Red	No	20 Ohm	Special
RT4C3FS	F013372	Red	Yes	20 Ohm	Special
RT4B9FS	F013382	White	No	20 Ohm	T/R Reverse
RT4C9FS	F013374	White	Yes	20 Ohm	T/R Reverse
<b>300 Volt modules with 4 Ohm Heat Coil</b>					
S4AB	F013603	Black	No	4 Ohm	Standard
R4B1S	F013627	Black	No	4 Ohm	Standard
R4C1S	F013543	Black	Yes	4 Ohm	Standard
S4AR	F013608	Red	No	4 Ohm	Special
R4B3S	F013408	Red	No	4 Ohm	Special
R4C3S	F013545	Red	Yes	4 Ohm	Special
R4B4S	F013574	Yellow	No	.25 Ohm	PBX Battery
R4C4S	F013553	Yellow	Yes	.25 Ohm	PBX Battery
R4B9S	F013579	White	No	4 Ohm	T/R Reverse
R4C9S	F013554	White	Yes	4 Ohm	T/R Reverse
<b>300 Volt modules, No Resistance</b>					
R4B2S	F013573	Green	No	N/A	Denial (no heat coil)
R4C2S	F013544	Green	Yes	N/A	Denial (no heat coil)

Notes: All models are UL Listed.

RxxxS modules are designed to meet Telcordia specification GR-974 CORE.

All RDUP (formerly RUS) modules meet the criteria in Govt Publication RDUP TE&CM 823.

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