


Features

- Nano-second response to transients
- Sneak current protection
- Solid brass gold or tin plated pins
- Designed to Telcordia and RUS standards
-  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

| | 240 V | 300 V |
|--|--|-----------------|
| 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 | |

Specifications are subject to change without notice.
 Customers should verify actual device performance in their specific applications

F Series 5-Pin Solid-State Overcurrent Surge Protectors

BOURNS®

How to Order

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

REV. A 11/08

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