

General Description:

The **RFS21502FAA000** RF Sensing Switch provides two (2x1) sensing switches which detect the presence of RF (primary) and provides the ability to switch to backup (secondary) on loss of primary. Each of the sensing switches utilize DPDT relays that terminate the off path with 75 Ω. The primary RF input is filtered, amplified, and detected to operate the relays. When the input level is above the preset threshold, which is adjustable using the front panel up/down pushbuttons, the relays are de-energized and the primary signal path is selected. When the signal falls below the preset threshold, the relays are energized and the secondary signal path is selected. A front panel slide switch has been included to allow manual override to the secondary input. The rear panel has been equipped with relay contact alarm outputs and a remote override via contact closure.

Note: This unit does not pass VDC or provide LNB power (LNB power optional). Under a no power condition, the unit will default to the primary position.

Specifications:

| | |
|------------------------------------|---|
| Overall RF Range: | 950-2150 MHz |
| Inputs/Outputs: | 2 Inputs (Primary, Secondary) / 1 Output (per switch) |
| Impedance: | 75 Ω |
| Detected Level: | -60 dBm to -20 dBm, adjustable |
| RF Switching Response Time: | 1.1 sec. (max.) |
| Insertion Loss: | 2.5 dB ± 1 dB |
| Frequency Response: | ±1.0 dB |
| Input Return Loss: | 12 dB |
| Output Return Loss: | 12 dB |
| Isolation: | 40 dB |
| Manual Override: | Front panel mounted slide switch |
| Remote Override: | Form 'C' contact closure |
| Threshold Adjust: | Front panel mounted up/down pushbuttons |
| Power Requirements: | 100-240 V~, 60/50 Hz |
| Power Consumption: | 21 W (excluding LNB power) |
| RF Connectors: | Type F, 75 Ω |
| Mechanical: | 1 RU (1.75" H x 19" W x 14" D) |
| Weight: | 7.2 lbs. gross (boxed), 4.6 lbs. net |



Operating Instructions:

1. Connect the appropriate RF cables to the PRIMARY, SECONDARY, and OUTPUT signal ports on the rear panel of the RFS21502FAA000.
2. Connect AC power to a 100-240 V~ power source.
3. The SECONDARY (i.e., red) LED should be on. (Note that the level control was factory preset to maximum threshold before the unit was shipped).
4. While monitoring the voltage at the LEVEL TEST PORTS using a high impedance digital voltmeter, press the LEVEL DOWN pushbutton until the PRIMARY (i.e., green) LED turns on. The following calibration chart indicates the approximate threshold voltages vs. operating primary RF power:

| <u>Total RF Power (dBm)</u> | <u>Test Port Voltage (V_{DC})</u> |
|-----------------------------|---|
| -20 | +1.3 |
| -30 | +1.1 |
| -40 | +0.9 |
| -50 | +0.7 |
| -60 | +0.5 |

NOTE: In the event of a power interruption, the threshold level setting is maintained at its most recent setting through the use of nonvolatile memory.

5. ALARM OPTION

Contact closure summary alarms are provided via the rear panel mounted quick connect barrier strips. When the RFS switch is in the primary position (i.e., the green LED is on), the contact closure alarm is de-energized and will be in the COM/NC position. When the RFS switches from primary to secondary, whether by local manual override, remote override, or loss of RF on primary, an alarm output is triggered (the contact closure alarm is energized and switches to the COM/NO position).

6. MANUAL OVERRIDE

Front panel mounted slide switches provide local manual override to the secondary input. There will be a contact closure alarm when the manual override switches the RF switch to the secondary input.

7. REMOTE OVERRIDE

Remote overrides are provided using Form 'C' contact closures via the rear panel quick connect barrier strips ("GND" and "CTL"). Grounding the "CTL" pin will cause the RFS to switch to the secondary input. There will be 5 V_{DC} present on the control pin under normal operating conditions (i.e., when the RFS is in the primary position). There will be a contact closure alarm when the remote override switches the RFS to the secondary input.



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