

Ruggedized Small Channel Count Switch Module

SR Series



Key Features

- 1x2, 2x2
- Compact size
- Typical IL 0.6 dB
- Return loss (RL) greater than 55 dB
- Several configurations available
- Reliable, small modules suitable for rugged environments where vibration and shock performance are critical
- Simple control
- Direct or TTL control of switching
- High repeatability over a broad range of environmental conditions
- Available in single-mode and multimode

Applications

- Optical signal routing, fiber network configuration, and restoration
- Sensor switching, source/detection selection, reference, and multi-source measurements in instrumentation products
- Fiberoptic component testing
- Research and development (R&D)

The JDSU Ruggedized Small Channel Count Switch Module (SR series) is used for incorporating customized test assemblies and specialized applications operating multiple source measurement instruments, such as optical spectrum analyzers, wavelength meters, and power meters.

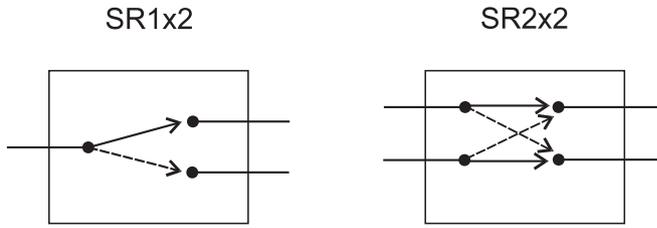
The SR series switches are manufactured for harsher environments, and are specified for a wide operating temperature range of -25°C to $+65^{\circ}\text{C}$.

Both single-mode (SM) and multimode (MM) versions of the SR Series switch connect optical channels by redirecting optical signals into a selected output fiber. This is achieved using a mirror driven by a highly precise mechanism that is activated via an electrical control signal. Switching can be done by applying either a direct electrical or TTL control. The SR series is available in both single-mode and multimode.

Using collimating lenses minimizes the insertion loss (IL) and improves the repeatability and stability of the switch parameters. The SR Series is optically passive and is, therefore, transparent to signalling formats and bandwidth. All configurations are optimized for bidirectional performance.

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SR Series Switch Configurations
Quick Picks



Solid lines represent the unpowered (0 V DC) state of the switch.

Specifications

Parameter	Typical	Maximum
Insertion loss (IL)		
Single-mode ¹ (SM) 1 x 2	0.6 dB	0.9 dB
SM 2 x 2	0.9 dB	1.2 dB
Multimode ¹ (MM) 1 x 2	0.5 dB	0.8 dB
MM 2 x 2	0.8 dB	1.1 dB
Return loss (RL)		
SM ² (high RL)	60 dB	55 dB
MM	25 dB	20 dB
Polarization dependent loss (PDL) ²		
SM	0.06 dB	0.1 dB
IL stability ²	± 0.03 dB	± 0.05 dB
Repeatability ⁴	± 0.01 dB	± 0.02 dB
Crosstalk		
SM	-60 dB	-50 dB
MM	-45 dB	-35 dB
Optical input power	N/A	300 mW
Switching time	7 ms	10 ms
Control signal duration	25 ms	N/A
Cycle rate	N/A	10 Hz
Power	5±5 % V DC/50 mA (75 mA for TTL option)	
Control	Direct or TTL	
Operating temperature	N/A	-25 to 65°C
Storage temperature	N/A	-40 to 80°C
Humidity (non-condensing)	N/A	95%
Dimensions (W x H x D) SR1 x 2, 2 x 2	70 x 17 x 40 mm	
Weight	90 g (110 g for Dual 2 x 2)	

1. Excluding connectors. Include 0.2 dB (typical IL) for each connector.
2. Excluding connectors.
3. Drift of any channel relative to one assigned reference channel at ±3°C deviation of ambient temperature over 7-day period.
4. Measured between two consecutive readings over 100 cycles.

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Ordering Information

Quick Picks*

The following selection of switches are popular configurations used for majority of switching applications.

Product Code	Description
Single-mode	
SR12+207DUFAL1.5	1x2 Direct, 9/125 μ m, 1310/1550 nm, 55 dB RL, FC/APC, 3 mm Jacketed Cable 1.5 m
SR12+207DUFPL1.5	1x2 Direct, 9/125 μ m, 1310/1550 nm, 55 dB RL, FC/PC, 3 mm Jacketed Cable 1.5 m
SR12+227DUFAL1.5	1x2 TTL, 9/125 μ m, 1310/1550 nm, 55 dB RL, FC/APC, 3 mm Jacketed Cable 1.5 m
SR12+227DUFPL1.5	1x2 TTL, 9/125 μ m, 1310/1550 nm, 55 dB RL, FC/PC, 3 mm Jacketed Cable 1.5 m
SR22+207DUFAL1.5	2x2 Direct, 9/125 μ m, 1310/1550 nm, 55 dB RL, FC/APC, 3 mm Jacketed Cable 1.5 m
SR22+207DUFPL1.5	2x2 Direct, 9/125 μ m, 1310/1550 nm, 55 dB RL, FC/PC, 3 mm Jacketed Cable 1.5 m
SR22+227DUFAL1.5	2x2 TTL, 9/125 μ m, 1310/1550 nm, 55 dB RL, FC/APC, 3 mm Jacketed Cable 1.5 m
SR22+227DUFPL1.5	2x2 TTL, 9/125 μ m, 1310/1550 nm, 55 dB RL, FC/PC, 3 mm Jacketed Cable 1.5 m
Multimode (50/125 μm)	
SR12+2018MFPL1.5	1x2 Direct, 50/125 μ m, 850 nm, 20 dB RL, FC/PC, 3 mm Jacketed Cable 1.5 m
SR12+2218MFPL1.5	1x2 TTL, 50/125 μ m, 850 nm, 20 dB RL, FC/PC, 3 mm Jacketed Cable 1.5 m
SR22+2018MFPL1.5	2x2 DIRECT, 50/125 μ m, 850 nm, 20 dB RL, FC/PC, 3 mm Jacketed Cable 1.5 m
SR22+2218MFPL1.5	2x2 TTL, 50/125 μ m, 850 nm, 20 dB RL, FC/PC, 3 mm Jacketed Cable 1.5 m
Multimode (62.5/125 μm)	
SR12+2028MFPL1.5	1x2 Direct, 62.5/125 μ m, 850 nm, 20 dB RL, FC/PC, 3 mm Jacketed Cable 1.5 m
SR12+2228MFPL1.5	1x2 TTL, 62.5/125 μ m, 850 nm, 20 dB RL, FC/PC, 3 mm Jacketed Cable 1.5 m
SR22+2028MFPL1.5	2x2 Direct, 62.5/125 μ m, 850 nm, 20 dB RL, FC/PC, 3 mm Jacketed Cable 1.5 m
SR22+2228MFPL1.5	2x2 TTL, 62.5/125 μ m, 850 nm, 20 dB RL, FC/PC, 3 mm Jacketed Cable 1.5 m

* Quick pick switches ship from stock with short lead times. All switches are shipped with north american style power cords.

Specialized Offering:

If the configurations above do not meet your performance requirements, please contact one of our regional sales team members to discuss potential specialized solutions for more sophisticated configurations of 1x1, 2x4, and 4x4.

Test & Measurement Regional Sales

NORTH AMERICA TEL: 1 866 228 3762 FAX: +1 301 353 9216	LATIN AMERICA TEL: +1 954 688 5660 FAX: +1 954 345 4668	ASIA PACIFIC TEL: +852 2892 0990 FAX: +852 2892 0770	EMEA TEL: +49 7121 86 2222 FAX: +49 7121 86 1222	www.jdsu.com/test
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