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FREECALL 1800 680 680

Large Channel Count Switch Module

SKB Series



Key Features

- Lifetime greater than 120 million cycles
- Up to 100 channels
- Up to 4 switches in a module
- Internal switches can be factory configured to create various configurations, such as blocking MxN
- Latching version available
- Queriable switch position and configuration
- Status and alarm registers
- Highly customer-configurable to assist in swapping spares or changing channel order
- Operating temperature of -35 to 75 °C for stepper-motor-based switches
- Typical IL 0.5 dB
- RL better than 55 dB
- Compact package designed to accommodate standard and custom solutions
- Printed circuit board or enclosure-mountable

Applications

- Remote fiber test systems (RFTS)
- Fiber network restoration
- Fiberoptic component test and measurement
- Integrated module solution designed for integration into new products
- OEM control and monitoring applications
- Sensing applications

Safety Information

- Complies with GR-1073

The JDSU SKB series controllable optical switch is designed to connect a single optical channel to any of N channels. It is the enhanced version of our legacy SK/SP series switch modules and is the only stepper-motor based switch module available in this market with a lifetime greater than 120 million cycles. Each module can accommodate multiple 1 x N switches that can be internally interconnected to provide various types of configurations, such as blocking M x N, where M represents inputs and N represents outputs, or each module can operate as independent switches.

The switch module is available in two package sizes:

- Package size 1 can accommodate up to two switches with total channel count up to 50.
- Package size 2 can accommodate up to four switches with a total channel count up to 100.

The operation of the switch is based on proven JDSU's expanded beam lens technology utilizing a precision stepper-motor to align optical channels. The use of collimating lenses minimizes insertion loss (IL). The design is optimized for high return loss (RL).

The switch is microprocessor controlled via a parallel interface or addressable serial interface (RS-485). It is designed for mounting on a printed circuit board or within a module for OEM control and monitoring applications.

Continued

Custom configurations and integration of passive components, with the switches in one of the two package sizes, are also available for this series of switches.

Configurations

The switch module is offered in a standard chassis with standard software that can control numerous configurations, as shown:

1 x N

A single switch with 1 x N configuration for N up to 100

MULTIPLE 1 x N

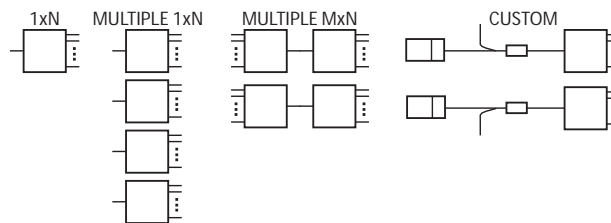
Up to four 1 x N switches with a total channel count of up to 100 (for example, four 1 x 25 optical switches or two 1 x 50 switches)

MULTIPLE M x N

Up to two M x N blocking switches for a total M + N channel count of 100

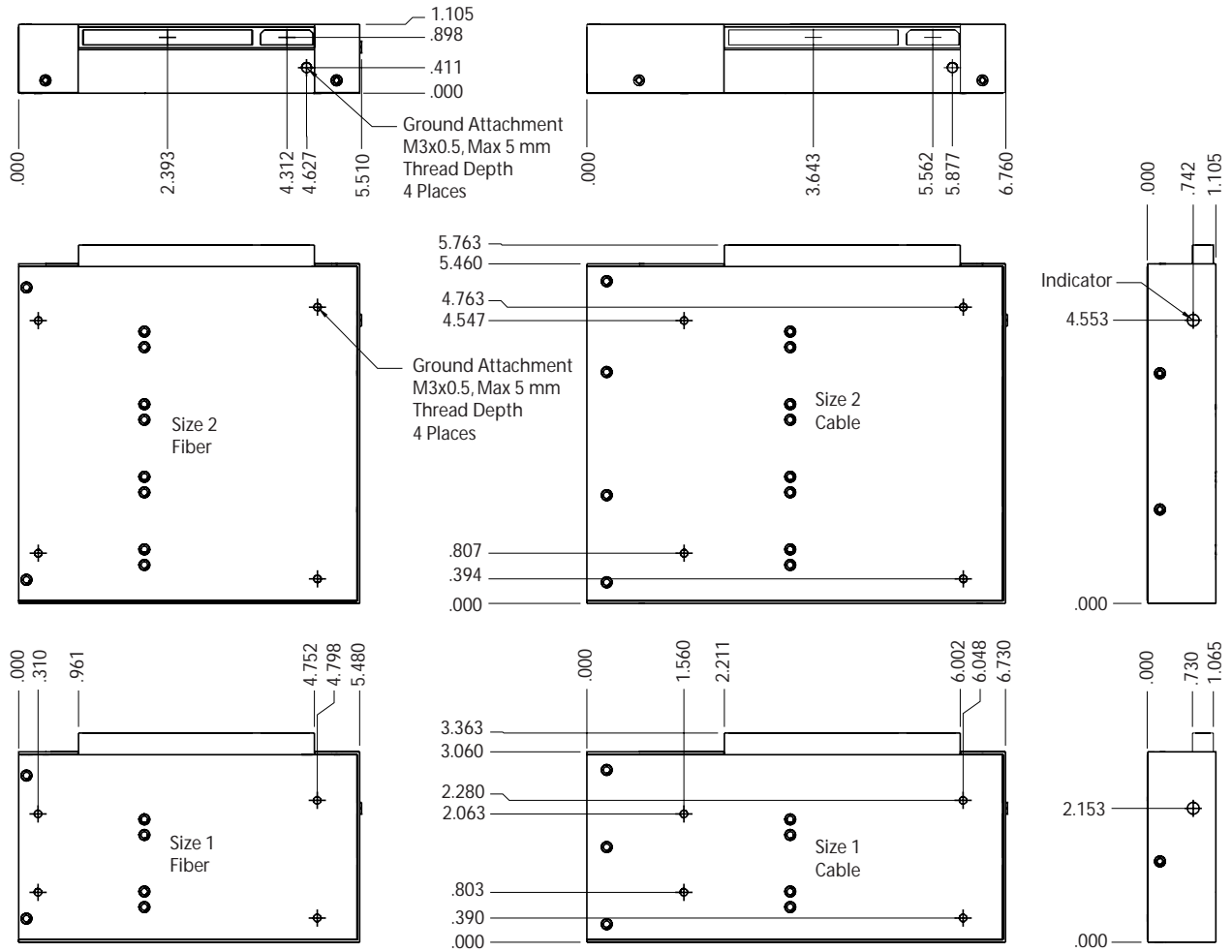
CUSTOM

1 x N switches plus passive devices, such as couplers

SKB Series Switch Configurations

3

Dimensions Diagram



4

Specifications

Parameter ^{1,2}	N ≤ 25 Non-Latching N ≤ 22 Latching Typical (Maximum)	26 ≤ N ≤ 100 Non-Latching 23 ≤ N ≤ 85 Latching Typical (Maximum)
Insertion loss (IL)		
Single-mode (SM)	0.5 (0.7) dB	0.8 (1.2) dB
Multimode (MM)	0.4 (0.6) dB	0.7 (1.0) dB
Return loss(RL) ³		
SM	62 (57) dB	55 (45) dB
MM	25 (20) dB	20 (20) dB
Polarization dependent loss (PDL) SM	0.02 (0.04) dB	0.04 (0.08) dB
IL stability ⁴	± 0.02 (± 0.025) dB	± 0.03 (± 0.04) dB
Change in IL during power on-off cycle (latching version)	± 0.2 (± 0.5) dB	± 0.4 (± 1.0) dB
Repeatability ^{4,5}		
Sequential switching	± 0.005 (± 0.01) dB	± 0.01 (± 0.03) dB
Random switching	± 0.01 (± 0.05) dB	± 0.03 (± 0.08) dB
Crosstalk (maximum) SM		-80 dB
Maximum input power (optical)		300 mW continuous
Lifetime		> 120 million cycles
Switching time (first channel/each additional channel)		
Speed 1 (standard)		25/15 ms
Speed 2		20/15 ms
Interface	Parallel and serial interface (RS-485)	
Operating voltage	5 ± 0.25 V DC	
Power consumption	7 W maximum (package 1)/10 W maximum (package 2)	
Operating temperature	-35 to 75 °C	
Storage temperature	-40 to 85 °C	
Humidity	Maximum 95 % RH from - 35 to 75 °C non-condensing	
Dimensions (W x H x D)		
Fiber version - package 1	78.2 x 27.8 x 140.0 mm/3.08 x 1.095 x 5.51 inch	
Cable version - package 1	78.2 x 27.8 x 171.7 mm/3.08 x 1.095 x 6.76 inch	
Fiber version - package 2	138.4 x 27.8 x 140.0 mm/5.45 x 1.095 x 5.51 inch	
Cable version - package 2	138.4 x 27.8 x 171.7 mm/5.45 x 1.095 x 6.76 inch	
Weight (configuration dependent)	0.6 kg maximum for package 1 1 kg maximum for package 2	

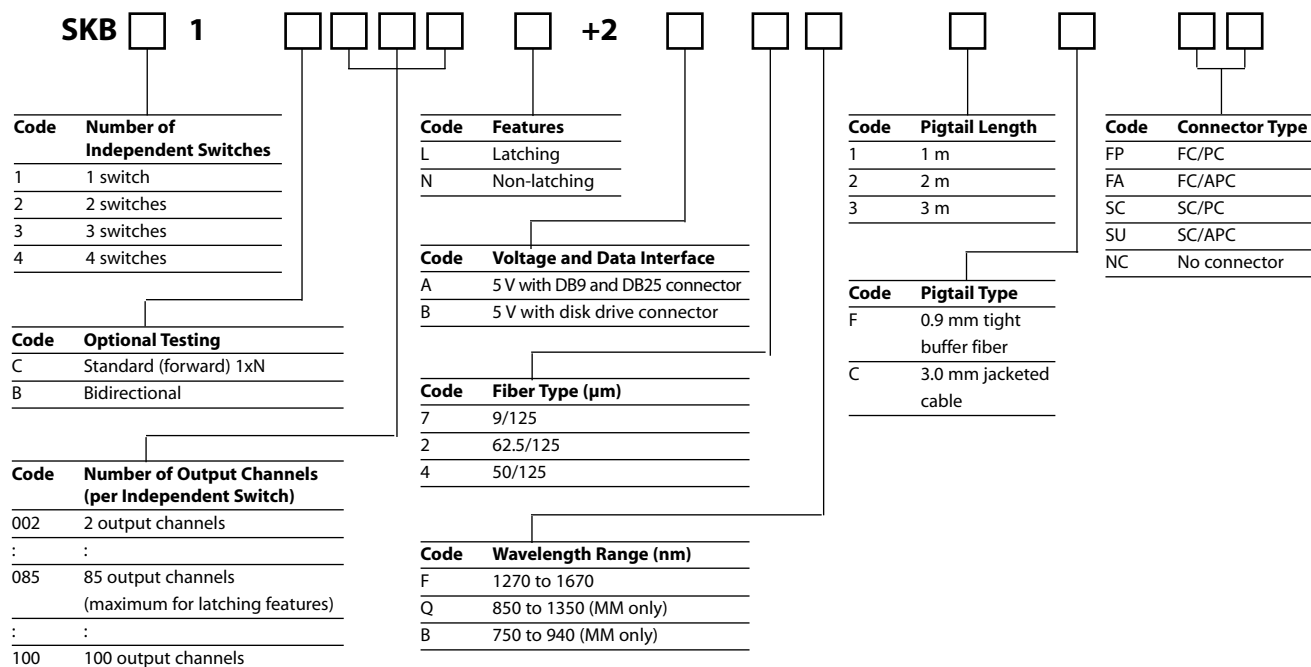
1. All specifications referenced without connectors.

2. All optical measurements taken after temperature has been stabilized for one hour.

3. RL specifications based on 1 m pigtail length.

4. All specifications are at speed 1 setting. Repeatability can be affected by increasing speed.

5. Measured between two consecutive readings over 100 cycles.

Ordering Information
Sample: SKB11C024L + 2B7F1FFP

Switch Output Limits

Number of Independent Switches	Maximum Outputs per Switch	
	Latching	Non-Latching
1	85	100
2	43	50
3	22	25
4	22	25



If the configurations available do not meet your performance requirements, please contact our global sales and customer service team to discuss the potential for specialized solutions.

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