Optical Switch Module

Optical switch has an irreplaceable important role in all automated optical test system. It's the core device to realize multiple objects testing and automated testing for various optical parameters, can avoid measurement uncertainty in multiple insertion and plug-pull of optical connectors.

Dimension offers a series of high-performance OSW optical switch modules for automation testing systems. These modules fit well in laboratories and in high standard manufacturing environments, applied together with Dimension's universal test platform, it can automatically route optical signals under program control, enabling parallel measurements for multiple optical channels and multiple optical components, significantly reducing the test time. So as to improve the total efficiency of testing procedures and reduce the overall cost.

Main advantages

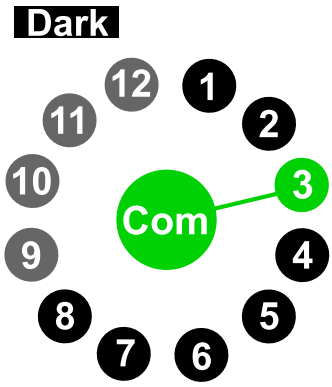
- Programmable, multi-switch between time, button and software control
- Low insertion loss, low polarization dependent loss and high channel consistency
- High repeatability with service life more than 10 million times [1]
- Short switching time, less than 30ms
- Platform + module design
- Support multiple control methods such as remote control

Main applications

- Optical path switching
- Optical loop protection and switching
- Optical network remote monitoring
- Optical device testing and research

Programmable, supports multiple trigger modes

OSW optical switch, can flexibly set the trigger modes of path switching by its program function. It can be triggered by external TRIG signal, waiting time, touchscreen, physical button or other modes, to provide various interfaces for the subsequent development of automation program.



High repeatability

OSW can reach 10 million times of random switch, MEMS optical switch can even reach to 1 billion times. The repeatability of insertion loss for 100 times random switch is less than 0.02dB, can provide users a high reliable optical path.[1]

Low insertion loss, low polarization dependent loss, high channel consistency

Each channel the insertion loss is less than 1.0 dB, the polarization dependent loss is less than 0.05dB.[2]

Platform + modular design, support multiple control modes

Dimension's universal test platform, is compatible with a wide range of functional test modules including OSW optical switches, offering significant advantages such as hot-pluggable, programmable, scalable, easy to maintain&manage, and low overall cost. Supports Ethernet control, USB control, touchscreen and physical buttons.

OMEGA Test Platform

ALPHA Test Platform

Technical Specifications

Module	Mechanical optical switch	MEMS optical switch
Wavelength	1260nm～1650nm	1250nm～1670nm
Test wavelength	1310nm/1550nm	
Insertion Loss	Typ：0.6dB Max：0.8dB	Typ：0.8dB Max：1.0dB
Return Loss	>65dB(SM/APC)；>35dB(MM/PC)	
Channel crosstalk	SM>70dB, MM>55dB	
Repeatability	<±0.02dB	<±0.01dB
Switching times	≥10^7	≥10^9
Switching time	10ms*(n-m)+5ms from port m to n, n>m 10ms*(n-m)+30ms from port n to m, n>m	min 5ms max 10ms
Power Supply	AC90～260V/50HZ	
Operation temperature	10℃～40℃	
Storage temperature	0℃～50℃	
Size [3]	MainFrame：359mm×274mm×115mm single-module：285mmX133mmX35mm Dual-Slot Module：285mmX133mmX71mm	

Ordering Information

OSW □ □ □□ □ — □□

Fiber type	
1	SM 9/125
5	MM 50/125
6	MM 62.5/125
7	MM 100/125
8	MM 200/225
9	MM 300/325

Number of input	
1	1
2	2
4	4

Number of output	
02	2
04	4
08	8
12	12
13	13
...	...
99	Customized

Mechanism	
A	Mechanical
B	MEMS
C	Customized

Interface type	
FA	FC/APC
FP	FC/PC
SA	SC/APC
SP	SC/PC
LA	LC/APC
LP	LC/PC
X	Customized

Example:
Module: OSW1112A-FA,Mechanical 1X12,optical switch,Single mode 9/125,interface type FC/APC

[1] Lifetime of mechanical optical switch is longer than 10^7, lifetime of MEMS switching life is longer than 10^9

[2] Excluding connectors.For mechanical optical switches the polarization dependent loss less than 0.05dB,for MEMS the polarization dependent loss less than 0.1dB.The insertion loss is related to the number of optical switch ports, The insertion loss of mechanical optical switches,is shown in the table below.

N≤16	17≤N≤64	65≤N≤128
Typ：0.6 Max：0.8	Typ：0.8 Max：1.0	Typ：0.8 Max：1.2

[3] Depending on the number of optical switch ports, there is single-slot, dual-slot, and multi-slots, where the width of multiple slots is a superposition of single-slot widths.

Relate Products

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