SM Fiber Optical Switches

Single-Mode Fibers, VIS-NIR Spectrum, TTL Version

XH-OSW-1XN(N≤16)

1×N Single-Mode (SM) Fiber Optical Switches

Description

1xN mechanical optical switch is a kind of light path control equipment,Can realize multi-channel fiber optic light path switching,In optical fiber transmission system, it is used for multi-channel fiber monitoring, multi light source/ detector selection, and optical fiber path protection etc. Besides, it is also used in optical fiber test system for optical fiber and its component test, outdoor cable test and multi-spot optical sensors monitoring system.

1×N Single-Mode (SM) Fiber Optical Switches

Feratures

● Low Insertion Loss

● Wide Wavelength Range

●TTL level control, easy to control

●Imported components, better stability

●Drive circuit breakdown self check function

●Modular design, convenient for secondary development

Application

●Optical Signal Switching and Routing

●Optical Network Monitoring

●Testing of Fiber Optic Component

●OTDR Testing

Specifications of the Single-Mode (SM) Fiber Switches	
Number of Channels (N)	1×N (N ≤ 16) or other channel counts on request
Fiber Type	Single-mode fibers
Insertion Loss	≤ 2.0 dB @ 430-670 nm ≤ 1.5 dB @ 780-1250 nm ≤ 1.0 dB @ 1260-1590 nm ≤ 1.5 dB @ 1600-2000 nm
Wavelength Range	400~2000nm
Wavelength Testing	405, 450, 480, 532, 650, 780, 850, 980, 1310, 1490, 1550, 1625, 1650, etc.
Return Loss	≥ 50 dB
Crosstalk	≥ 70 dB
Polarization Dependent Loss (PDL)	≤0.05 dB
Wavelength Dependent Loss (WDL)	≤0.25 dB
Temperature Dependent Loss (TDL)	≤0.25 dB
Repeatability	≤0.02 dB
Lifetime	$>10^7$
Switching Time	≤8 ms （Adjacent channel）
Optic Power	≤500 mw
Connector	FC, LC, SC, ST, MPO, etc.
Control Mode	TTL
Working power supply	5V/500mA
Operating Temperature	-20 ℃ ~ +70 ℃
Storage Temperature (℃)	-40 ℃ ~ +85 ℃
Dimension (mm)	135 ×64 × 32 mm (Channel Amount ≤ 16)

Pin Configurations of the Single-Mode (SM) Fiber Switches			
DB-9 male connector			
Pin No.	I / O	Signal	Description
1	Input	D0	D0~ D3 is channel selection Bit0~Bit3,D0 is low, D3 is high
2	Input	D1	
3	Input	D2	
4	Input	D3	
5	Input	RESET	TTL, Low level reset to channel 0. High level means channel selection bits are effective.
6	Out	READY	TTL, Ready (High=Not ready, Low=Ready)
7	Out	ERROR	TTL, Error OR Failure , (High=Error, Low=No error)
8	Power	GND	Ground
9	Power	VCC	5.0±5% VDC Power Supply (max 500mA)

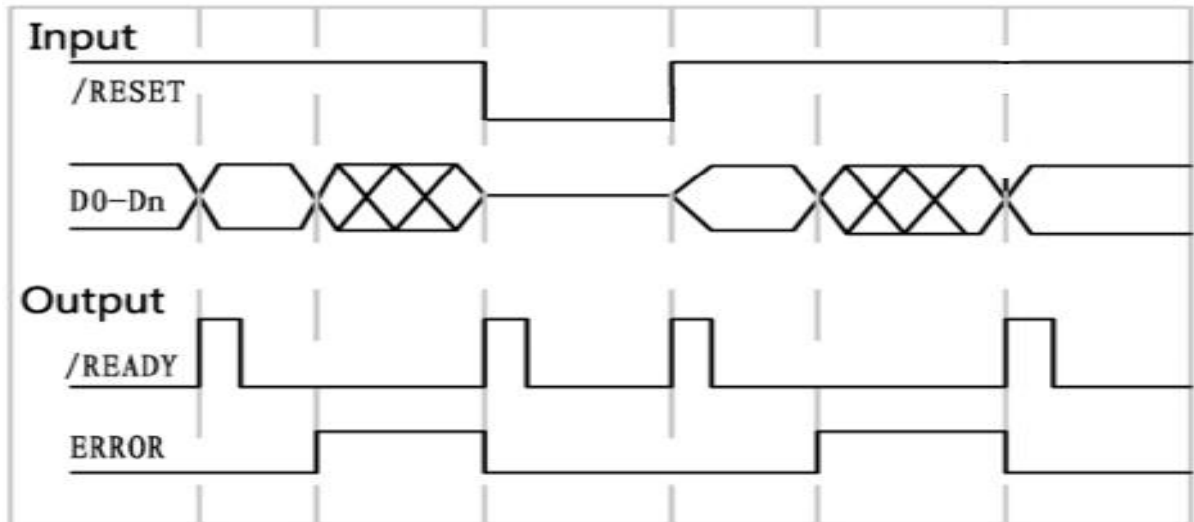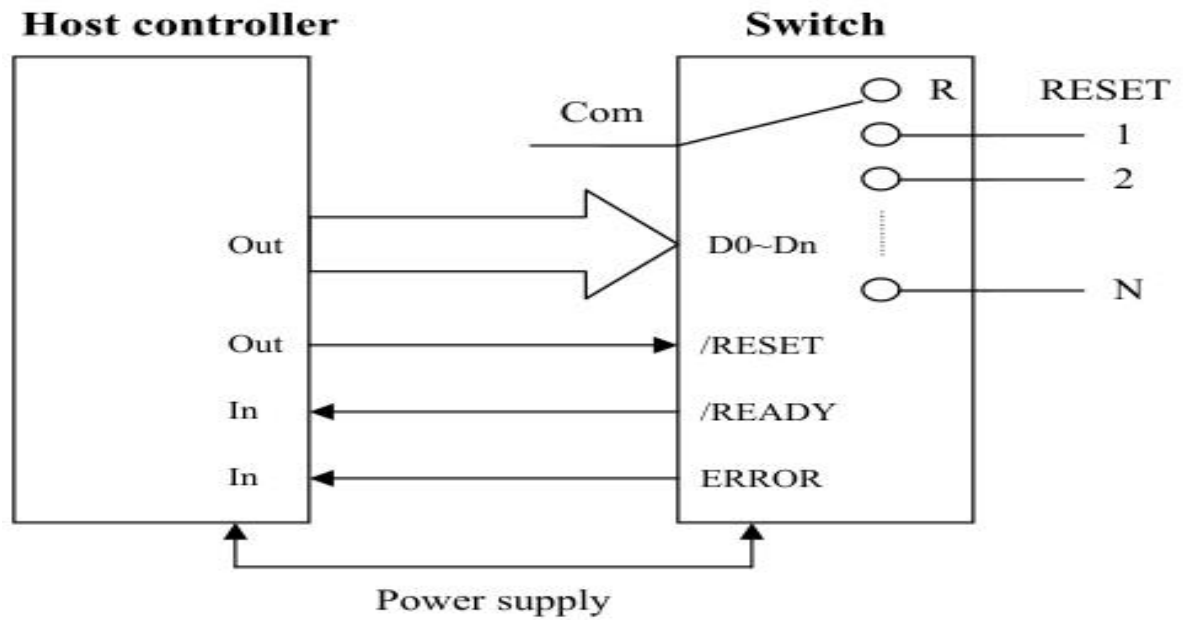| Channel Selection Table of the Single-Mode (SM) Fiber Switches					
Channel	D0	D1	D2	D3	RESET
COM-0	x	x	x	x	0
COM-1	0	0	0	0	1
COM-2	1	0	0	0	1
COM-3	0	1	0	0	1
...					1
COM-14	1	0	1	1	1
COM-15	0	1	1	1	1
COM-16	1	1	1	1	1

Dimensions
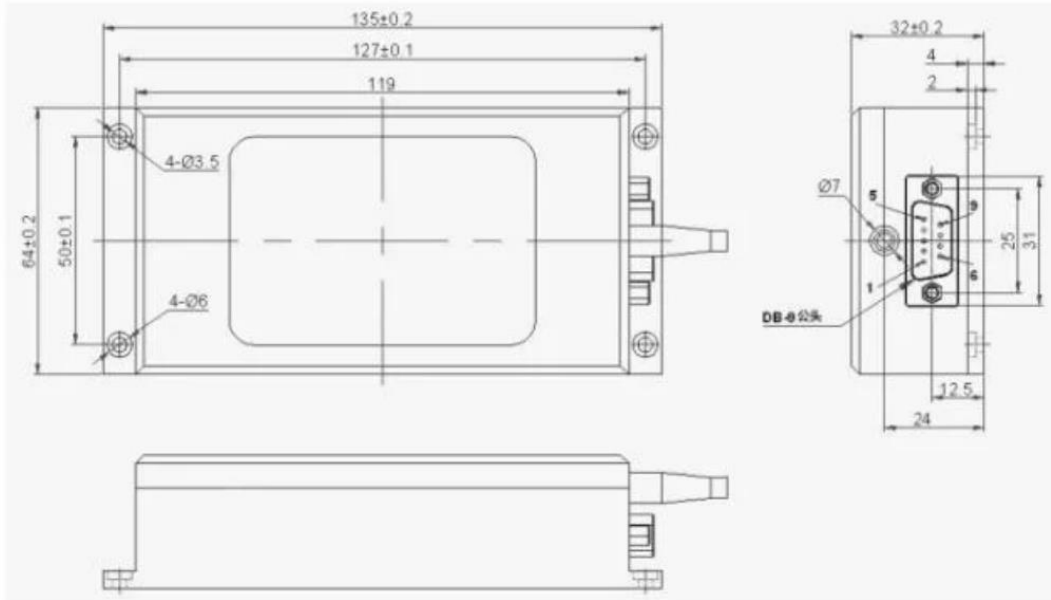
Optical Route
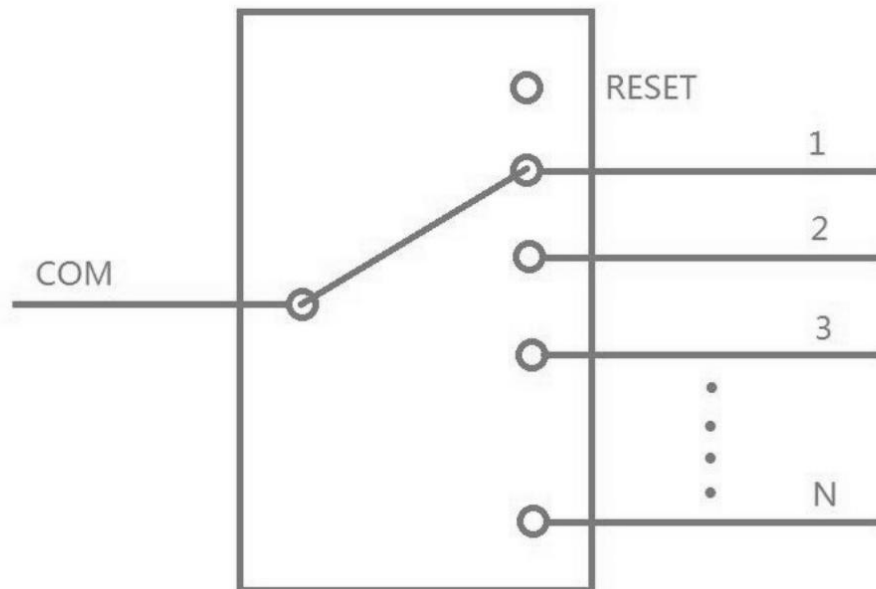
Timing Diagram

Control Chart

Operating Instructions

(1) Lfiber's single-mode (SM) fiber switches have TTL/CMOS parallel interface. To distinguish from each other, there is a mark of a number for each of the connectors. The switches are bidirectional in operation.

(2) The SM fiber switches can be controlled via TTL/CMOS parallel interface with a DB-9 connector. See the Pin Specifications and Control Chart to set the connection correctly before operations.

(3) When supply power to the switch, it will reset the 0 channel. When /READY and ERROR signals become low, the switch is ready for the data or the reset signal.

(4) Channel Selection: Set /READY signal high and then connect the data lines to select the channel. Whenever the data exceed N (the max channel of the switch), the ERROR signal becomes high, until a correct data occurred or RESET signal is given. The SM fiber switches will monitor the data lines, and switch to the position specified by the data lines.

(5) Reset Operation: Set /RESET signal low, and the device will switch to the open position. /READY and ERROR signals become low after reset operation. Never try to keep /RESET signal low all the time otherwise the SM fiber switches will repeat the reset operation until the signal goes high. The low level on the /RESET pin should not exceed 20ms.

(6) The /READY signal keeps high when the SM fiber switches are in operation (switching) and it becomes low after operations. The ERROR signal keeps high when an invalid data appears on the data line and it becomes low after reset operation or input a valid data. To understand the device's operation situation, the /READY and ERROR signal should be monitored although D0~D3 data lines are enough for the simplest application.

Ordering Information ： XH-OSW-1XN-A-B-C-D-E

Channel(N)	Wavelength Testing(A)	Fiber Type(B)	Protective casing(C)	Fiber length(D)	Connector(E)
N:≤16 X:Others	850:850nm 1310:1310nm 1550:1550nm 1310/1550:1310nm/1550nm X:Others	SM:SM,9/125 M5:MM,50/125 M6:MM,62.5/125 X:Others	25::250um 90:900um X:Others	05:0.5m 10:1.0m 15:1.5m X:Others	OO:None FP: FC/PC FA: FC/APC SP: SC/PC SA: SC/APC LP: LC/PC LA: LC/APC X:Others