XH-OSW-1X128

1×128 Mechanical Optical Switch

USER MANUAL

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Introduction

1x128 mechanical optical switch is a kind of light path control equipment. It can realize multi-channel fiber optic light path switching. In the 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 related component test, outdoor cable test and multi-spot optical sensors monitoring system.

Feratures

●Low Loss and High Reliability

●Parallel Interface (TTL)

●Modularized Design

●Epoxy-free on Optical Path

●Drive Circuit Breakdown Self-checking Function

Applications

•Ring Network

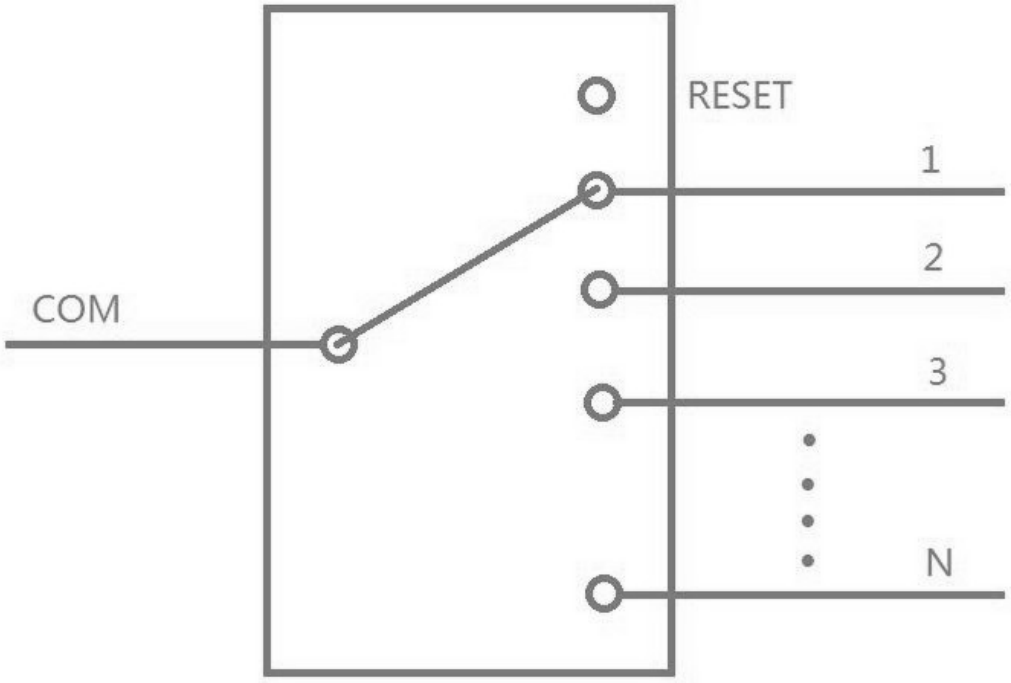
•Remote Monitoring in Optical Network

•Testing of Fiber Optical Component

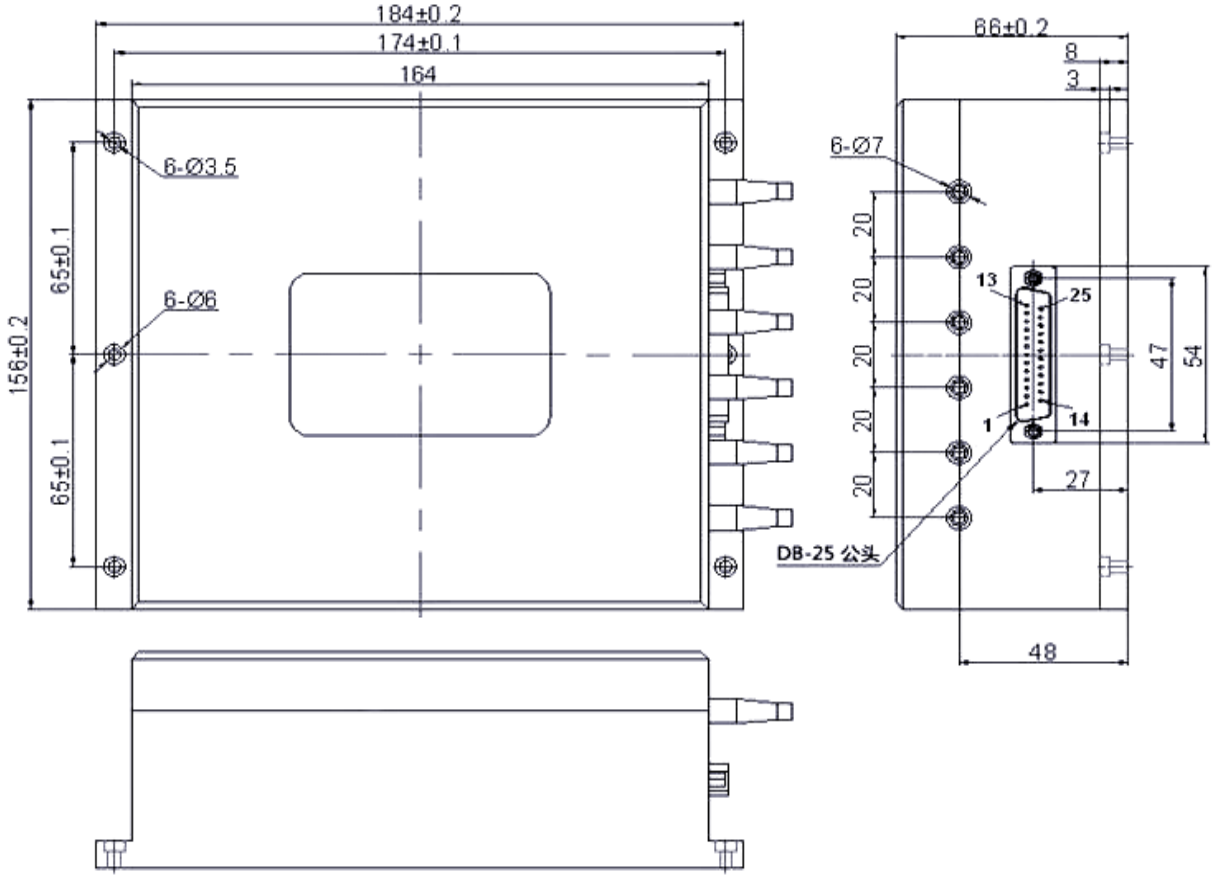
Specifications

Parameter	Parameter Values
Model	XH-OSW-1X128
Insertion Loss	Typ.:0.8 dB ， Max.:1.5 dB
Wavelength Range	1260~1650 nm
Test Wavelength	1310/1550 nm
Fiber Type	9/125 um
Return Loss	≥50 dB
Crosstalk	≥ 70 dB
PDL	≤0.10 dB
WDL	≤0.50 dB
Repeatability	≤0.05 dB
Lifetime	> 10^7
Optic Power	≤500 mW
Switching Time	≤10 ms （Adjacent channel）
Connector	FC、LC、SC、ST
Control Mode	TTL
Working Power Supply	5V/2000 mA
Product Sze	184 x 156 x 66
Operating Temperature	-20 ℃ to +70 ℃
Operating Temperature	-40 ℃ to +85 ℃

Optical Route



Dimension



Pin Specifications

DB-25 male connector			
Pin No.	I / O	Signal	Description
15	Input	D0	D0~ D6 is channel selection Bit0~Bit6,D0 is low, D6 is high
16	Input	D1	
17		D2	
18	Input	D3	
19	Input	D4	
20		D5	
21	Input	D6	
22	Input	RESET	TTL, Low level reset to channel 0. High level means channel selection bits are effective.
2	Out	READY	TTL, Ready (High=Not ready, Low=Ready)
3	Out	ERROR	TTL, Error OR Failure , (High=Error, Low=No error)
1,10,14, 23	Power	GND	Ground
12,25	Power	VCC1	5.0V±5% VDC motor power (max 1950mA)
13	Power	VCC2	5.0V±5% VDC Drive circuit power(50mA)
4,5,6,7,8 ,9,11,24	NC	NC	NC

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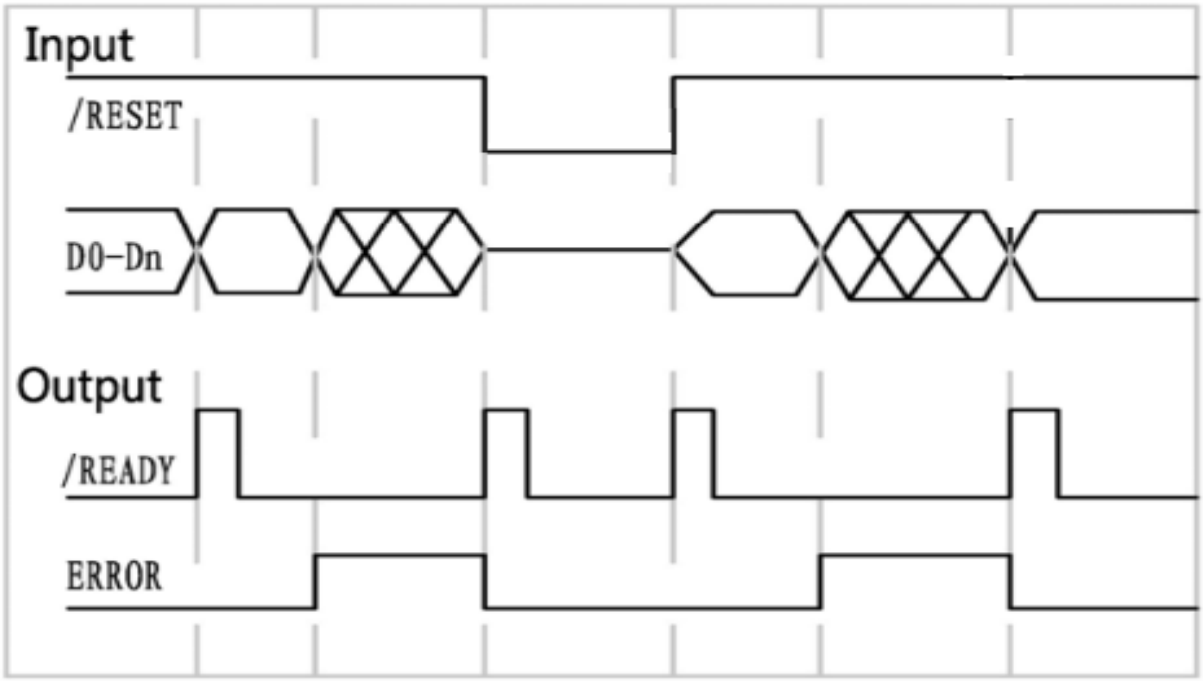
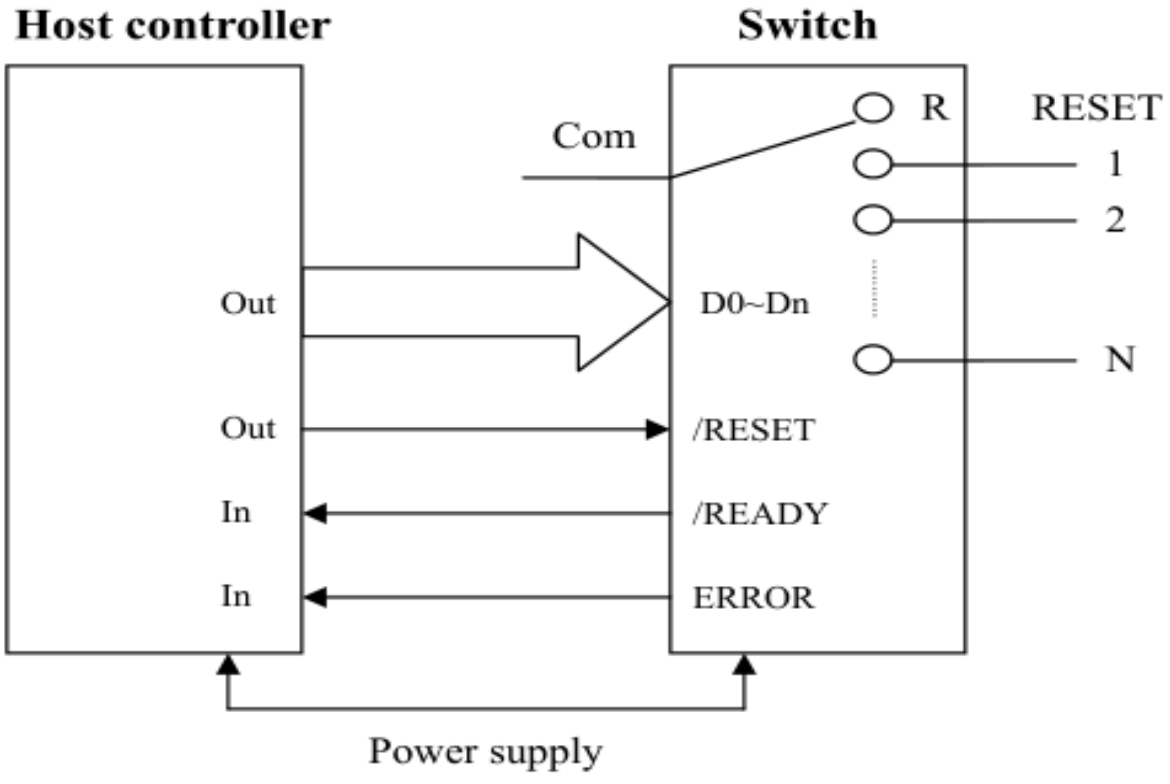
Channel Selection Table

Channel	D0	D1	D2	D3	D4	D5	D6	RESET
COM-0	x	x	x	x	x	x	x	0
COM-1	0	0	0	0	0	0	0	1
COM-2	1	0	0	0	0	0	0	1
COM-3	0	1	0	0	0	0	0	1
COM-4	1	1	0	0	0	0	0	1
COM-5	0	0	1	0	0	0	0	1
COM-6	1	0	1	0	0	0	0	1
COM-7	0	1	1	0	0	0	0	1
COM-8	1	1	1	0	0	0	0	1
...	.	.	.	.	.	.	.	1
...	.	.	.	.	.	.	.	1
...	.	.	.	.	.	.	.	1
...	.	.	.	.	.	.	.	1
...	.	.	.	.	.	.	.	1
COM-121	0	0	0	1	1	1	1	1
COM-122	1	0	0	1	1	1	1	1
COM-123	0	1	0	1	1	1	1	1
COM-124	1	1	0	1	1	1	1	1
COM-125	0	0	1	1	1	1	1	1
COM-126	1	0	1	1	1	1	1.	1
COM-127	0	1	1	1	1	1	1	1
COM-128	1	1	1	1	1	1	1	1

Timing Diagram



Control Chart



Operation

(1) The switch has TTL/CMOS parallel interface and fiber connectors. To distinguish from each other, there is a mark of a number for each of the connectors. The switch is bidirectional in operation.

(2) The switch can be controlled via TTL/CMOS parallel interface with a DB-25 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 switch 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 switch 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 switch is in operation (switching) and it become low after operations. The ERROR signal keeps high when an invalid data appears on the data line and it become 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~D6 data lines are enough for the simplest application.