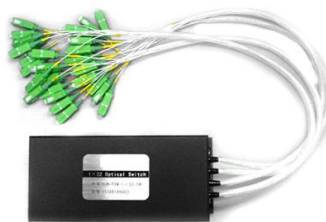


1×N Optical Switch

Features

- More Than 128 Channels
- Low Loss and High Reliability
- Parallel Interface (TTL)
- Modularized Design
- Epoxy-free on Optical Path



Applications

- Ring Network
- Remote Monitoring in Optical Network
- Testing of Fiber, Optical Component

1×N Optical switch is a kind of functional component, with the ability of switching optical route. 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.

Specifications

Parameters	Unit	FSW-1×N		
Insertion Loss	dB	1 < N ≤ 45	45 < N ≤ 88	88 < N ≤ 128
		Typ: 0.8 Max: 1.0	Typ: 1.2 Max: 1.5	Typ: 1.5 Max: 1.8
Wavelength Range	nm	850±40 / 1300±40		1260 ~ 1650
Test Wavelength	nm	850 / 1300		1310 / 1550
Return Loss	dB	MM ≥ 30 SM ≥ 50		
Crosstalk	dB	≥ 55		
PDL	dB	≤ 0.05		
WDL	dB	≤ 0.25		
TDL	dB	≤ 0.25		
Repeatability	dB	≤ ±0.05		
Durability	Cycles	≥ 10 Million		
Switching Time	ms	≤ 10 (Sequence switch time of adjacent channel)		
Optical Power	mW	≤500		
Operating Temperature	℃	-20 ~ +70		
Storage Temperature	℃	-40 ~ +85		
Relative Humidity	%	5 ~ 95		
Dimension	mm	135×40×32 (N≤4)	135×64×32 (N≤12)	184×78×36 (N≤16)
		184×78×66 (N≤45)	184×156×66 (N≤88)	184×220×66 (N≤128)
		140×77.5×32 (N≤16)	140×77.5×64 (N≤32)	

Pin Configurations

DB-9 male connector (max.1×16)

Pin No.	Signal Name	I / O	Description
1	D0	Input	TTL, Channel selection bit 0
2	D1	Input	TTL, Channel selection bit 1
3	D2	Input	TTL, Channel selection bit 2
4	D3	Input	TTL, Channel selection bit 3
5	/RESET	Input	TTL, Low level reset to channel 0. High level means channel selection bits are effective.
6	/READY	Output	TTL, Ready (High=Not ready, Low=Ready)
7	ERROR	Output	TTL, Error (High=Error, Low=No error)
8	GND	Input	Ground
9	+5VDC	Input	5.0±5% VDC Power Supply (max 550mA)

DB-15 male connector (max.1×32)

Pin No.	Signal Name	I / O	Description
2	D0	Input	TTL, Channel selection bit 0
3	D1	Input	TTL, Channel selection bit 1
4	D2	Input	TTL, Channel selection bit 2
5	D3	Input	TTL, Channel selection bit 3
6	D4	Input	TTL, Channel selection bit 4
11	/RESET	Input	TTL, Low level reset to channel 0. High level means channel selection bits are effective.
7	/READY	Output	TTL, Ready (High=Not ready, Low=Ready)
8	ERROR	Output	TTL, Error (High=Error, Low=No error)
1, 9	GND	Input	Ground
15	+5VDC	Input	5.0±5% VDC Digital power supply (max 50mA)
12	VM	Input	5.0±5% VDC or 12±5% VDC Drive power supply (max 500mA)
10, 13, 14	NA		

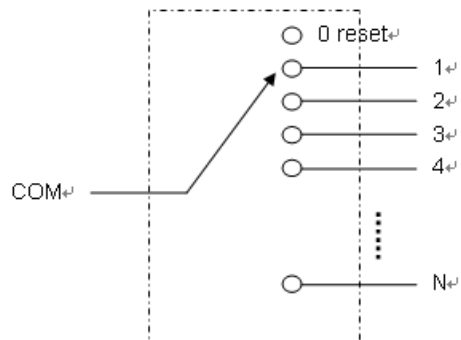
DB-25 male connector (max.1×128)

Pin No.	Signal Name	I / O	Description		
15	D0	Input	TTL, Channel selection bit 0		
16	D1	Input	TTL, Channel selection bit 1		
17	D2	Input	TTL, Channel selection bit 2		
18	D3	Input	TTL, Channel selection bit 3		
19	D4	Input	TTL, Channel selection bit 4		
20	D5	Input	TTL, Channel selection bit 5		
21	D6	Input	TTL, Channel selection bit 6		
22	/RESET	Input	TTL, Low level reset to channel 0. High level means channel selection bits are effective.		
2	/READY	Output	TTL, Ready (High=Not ready, Low=Ready)		
3	ERROR	Output	TTL, Error (High=Error, Low=No error)		
1, 10, 14, 23	GND	Input	Ground		
12, 25	+5VDC	Input	5.0±5% VDC Digital power supply (max 50mA)		
13	VM	Input	5.0±5% VDC or 12±5% VDC Drive power supply	N≤45	Current supply ≤500mA
11, 24				N≤88	Current supply ≤750mA
				N≤128	Current supply ≤1000mA
4, 5, 6, 7, 8, 9	NA				

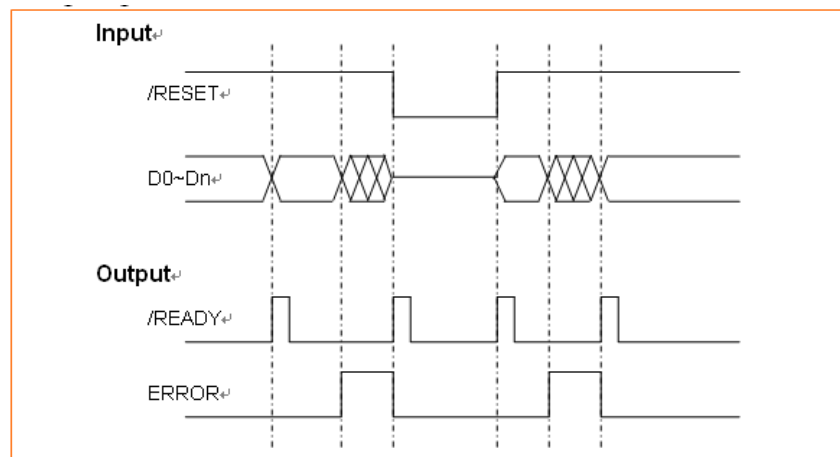
Channel Selection Table

Max Channel	Input								Active Channel
	/RESET	D6	D5	D4	D3	D2	D1	D0	
N=16	0	x	x	x	x	x	x	x	0 reset
	1	x	x	x	0	0	0	0	COM → 1
		x	x	x	0	0	0	1	COM → 2
		x	x	x	0	0	1	0	COM → 3
		x	x	x	...	...	...	...	...
		x	x	x	1	1	1	1	COM → 16
N=128	0	x	x	x	x	x	x	x	0 reset
	1	0	0	0	0	0	0	0	COM → 1
		0	0	0	0	0	0	1	COM → 2
		0	0	0	0	0	1	0	COM → 3
		...	...	...	...	...	...	...	...
		1	1	1	1	1	1	1	COM → 128

Optical Route

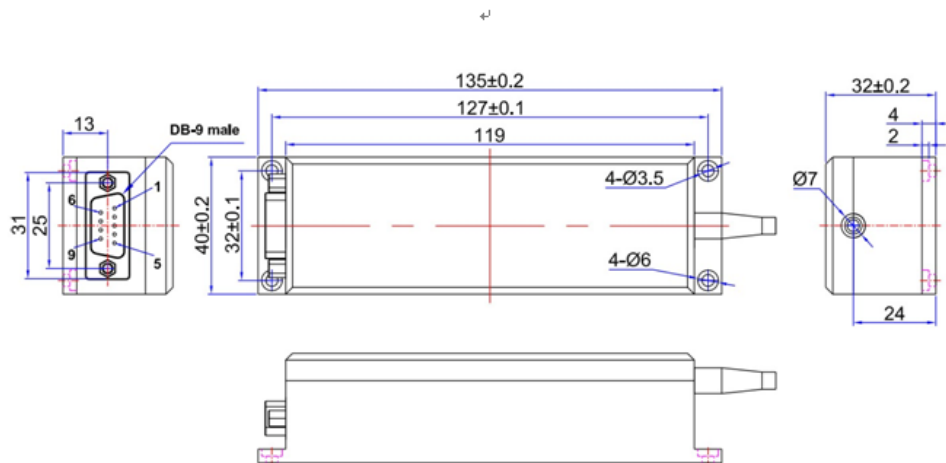


Timing Diagram



Dimension

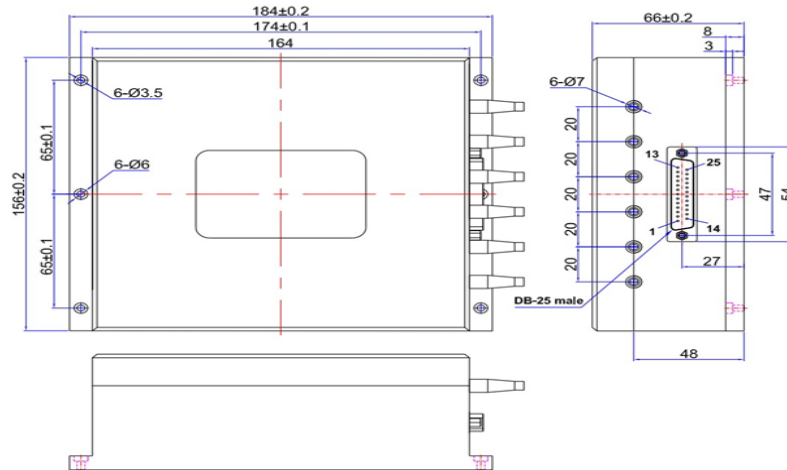
➤ 01: 135×40×32-DB9-F (N≤4, DB-9 male)



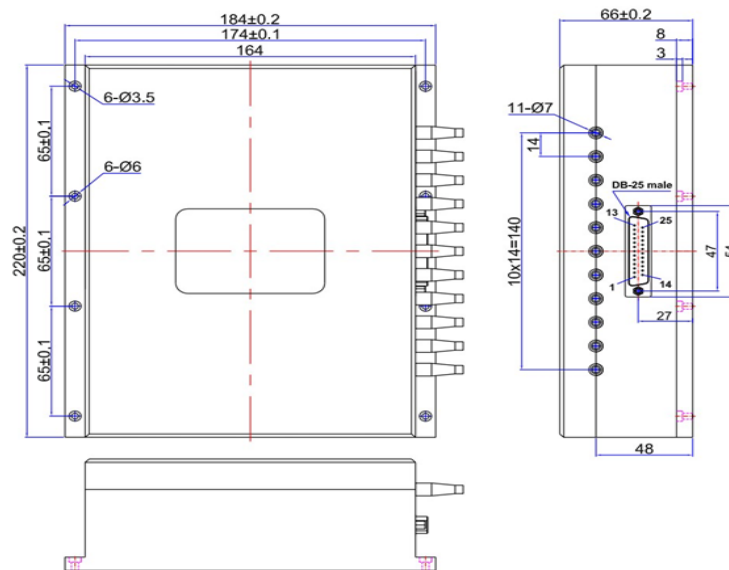
↑

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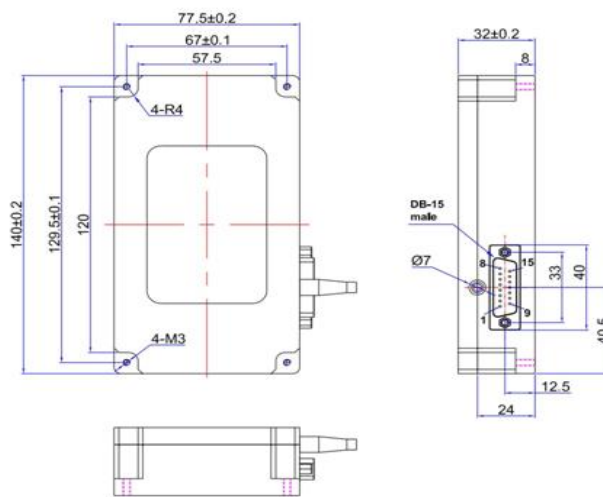
➤ 05: 184×156×66-DB25 (N≤88, DB-25 male)↵



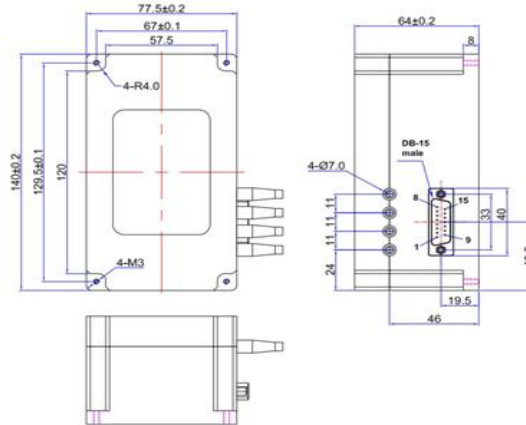
➤ 06: 184×220×66-DB25 (N≤128, DB-25 male)↵



➤ 07: 140×77.5×32-DB15-C (N≤16, DB-15 male)↵



➤ 08: 140×77.5×64-DB15-C (N≤32, DB-15 male)



Ordering Information: FSW-1×N-A-B-C-D-E-F

N	A	B	C	D	E	F
Channel	Fiber Type	Test Wavelength	Tube Type	Fiber Length (Include connector)	Connector	Dimension
1 ~ 128	SM: SM,	850: 850nm	90:	05: 0.5m±5cm	OO:None	01: 135×40×32-DB9-F
	9/125	1310: 1310nm	900um	10: 1.0m±5cm	FP: FC/PC	02: 135×64×32-DB9
	M5: MM,	1550: 1550nm	20:	15: 1.5m±5cm	FA: FC/APC	03:
	50/125	1310/1550:1310/1550nm	2.0mm	X: Others	SP: SC/PC	184×78×36-DB15-F
	M6: MM,	X:Others	30:		SA: SC/APC	04: 184×78×66-DB25
	62.5/125		3.0mm		STP: ST/PC	05: 184×156×66-DB25
	X: Others		X: Others		STA: ST/APC	06: 184×220×66-DB25
					LP: LC/PC	07:
					LA: LC/APC	140×77.5×32-DB15-C
					X: Others	08:
						140×77.5×64-DB15-C
						X: Others