

MEMS Optical Switch Spec

Features

- ❖ Modular Design
- ❖ Fast Switching Time
- ❖ Low IL, Good Repeatability
- ❖ High reliability and stability

Application

- ❖ MAN
- ❖ Data Center
- ❖ Fiber Sensing and Monitoring
- ❖ Instrumentation

Compliance Standard

- ❖ Telcordia GR-1221
- ❖ Telcordia GR-1073



Performance Specifications(Single Mode)

Parameters	Unit	MEMS 1×N-SM	
Working Wavelength	nm	O/C/L/L+ band	
Testing Wavelength	nm	1310/1550/1625/1650	
Insertion Loss	dB	@CWL Single-band	@CWL Dual-band
		≤0.8 (N≤8)	≤1.0 (N≤8)
		≤1.0 (8<N≤16)	≤1.2 (8<N≤16)
		≤1.3 (16<N≤32)	≤1.5 (16<N≤32)
		≤1.5 (32<N≤64)	≤1.7 (32<N≤64)
		≤2.0 (64<N≤144)	≤2.2 (64<N≤144)
WDL	dB	≤0.3 (N≤64)	
		≤0.4 (64<N≤144)	
		≤0.5 (144<N≤256)	
PDL	dB	≤0.15	
Return Loss	dB	≥45	
Crosstalk	dB	≥50	
Repeatability	dB	≤±0.05	
Switching Time	ms	≤15	
Durability	times	≥10 ⁹	
Input Optical Power	mW	≤500	
Operating Voltage	V	DC 5V±10%	
Operating Current	mA	≤50 (N≤16)	
		≤250 (16<N≤64)	
		≤350 (64<N≤144)	
		≤500 (144<N≤256)	

Hirundo Optics Inc

Factory: 2nd Floor, Building 6, #16 Xinfu Road, Southern Cable Industrial Park, Rongli Ronggui Street, Shunde District, Foshan city, Guangdong 528305 China
Tel: 0757-26619220 Email: info@hirundo-link.com Website: <https://www.hirundo-link.com/>

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Operating Temp.	°C	-20 ~ +85
Storage Temp.	°C	-40 ~ +85
Dimension (L×W×H)	mm	M1: 34×24×11 ±0.2 (N≤64, Bare Fiber) M2: 60×24×11 ±0.2 (N≤16, Loose Tube) M3: 90×55×12 ±0.2 (16<N≤64, Loose Tube) M4: 100×100×12 ±0.2 (64<N≤144, Loose Tube) M5: 110×141×12 ±0.2 (144<N≤256, Loose Tube)
1.Within operating temperature and all SOP. 2.Excluding connector. 3.WDL is measured in a ±20nm range at 23°C.		

Performance Specifications(Multi-Mode)

Parameters	Unit	MEMS 1×N-MM	
Working Wavelength	nm	850±30, 1310±30	
Testing Wavelength	nm	850/1310	
Insertion Loss	dB	@CWL Single-band ≤0.8 (N≤12) ≤1.0 (12<N≤16) ≤1.8 (16<N≤128)	@CWL Dual-band ≤1.0 (N≤12) ≤1.2 (12<N≤16) ≤2.0 (16<N≤128)
WDL	dB	≤0.3 (N≤16) ≤0.4 (16<N≤128)	
PDL	dB	≤0.2	
Return Loss	dB	≥30	
Crosstalk	dB	≥30	
Repeatability	dB	≤±0.05	
Switching Time	ms	≤15	
Durability	times	≥10 ⁹	
Input Optical Power	mW	≤500	
Operating Voltage	V	DC 5V±10%	
Operating Current	mA	≤50 (N≤16) ≤250 (16<N≤64) ≤350 (64<N≤128)	
Operating Temp.	°C	-20 ~ +85	
Storage Temp.	°C	-40 ~ +85	
Dimension (L×W×H)	mm	M1: 34×24×11 ±0.2 (N≤16, Bare Fiber) M2: 60×24×11 ±0.2 (N≤16, Loose Tube) M3: 90×55×12 ±0.2 (16<N≤64, Loose Tube) M4: 100×100×12 ±0.2 (64<N≤128, Loose Tube)	
1.Within operating temperature and all SOP. 2.Excluding connector. 3.WDL is measured in a ±20nm range at 23°C。			

Optical Route

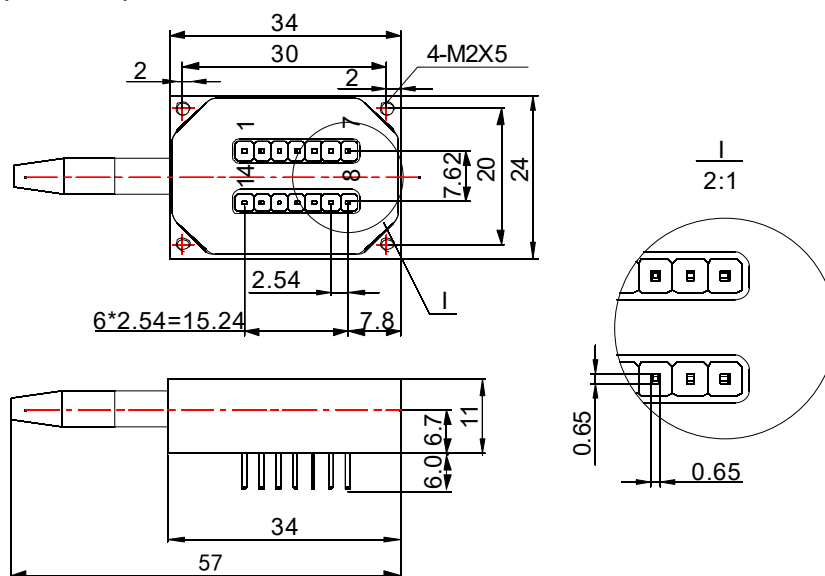
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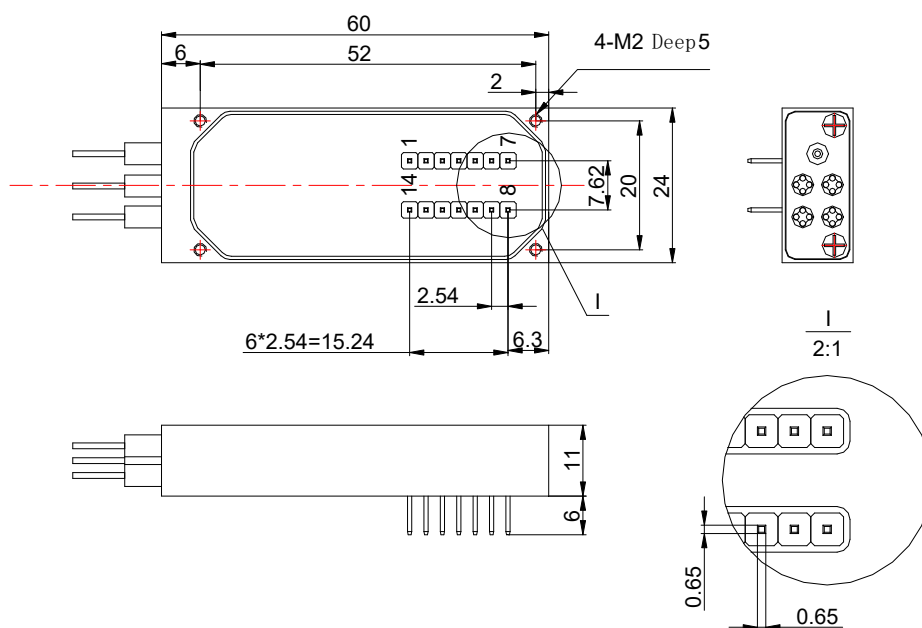
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Dimensions Diagram(Unit:mm)

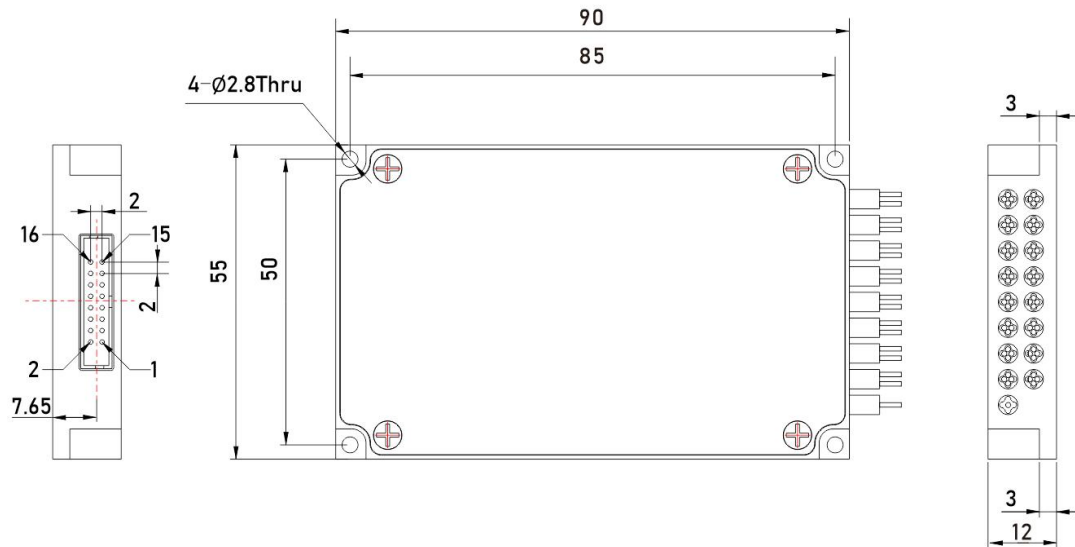


M1: 34×24×11mm

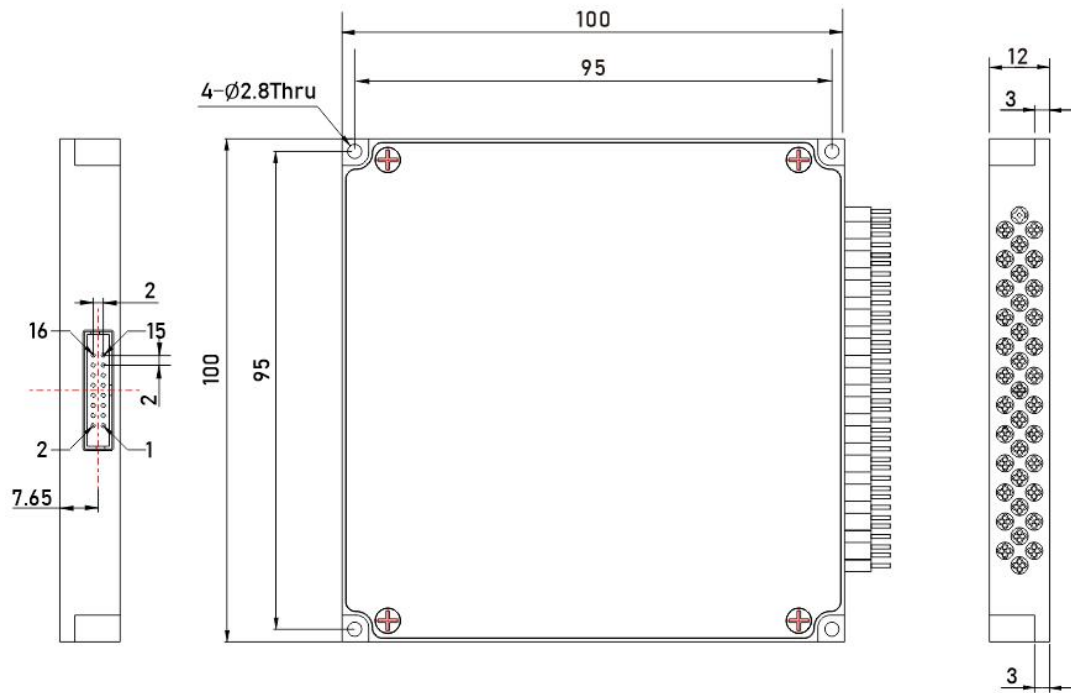


M2: 60×24×11mm

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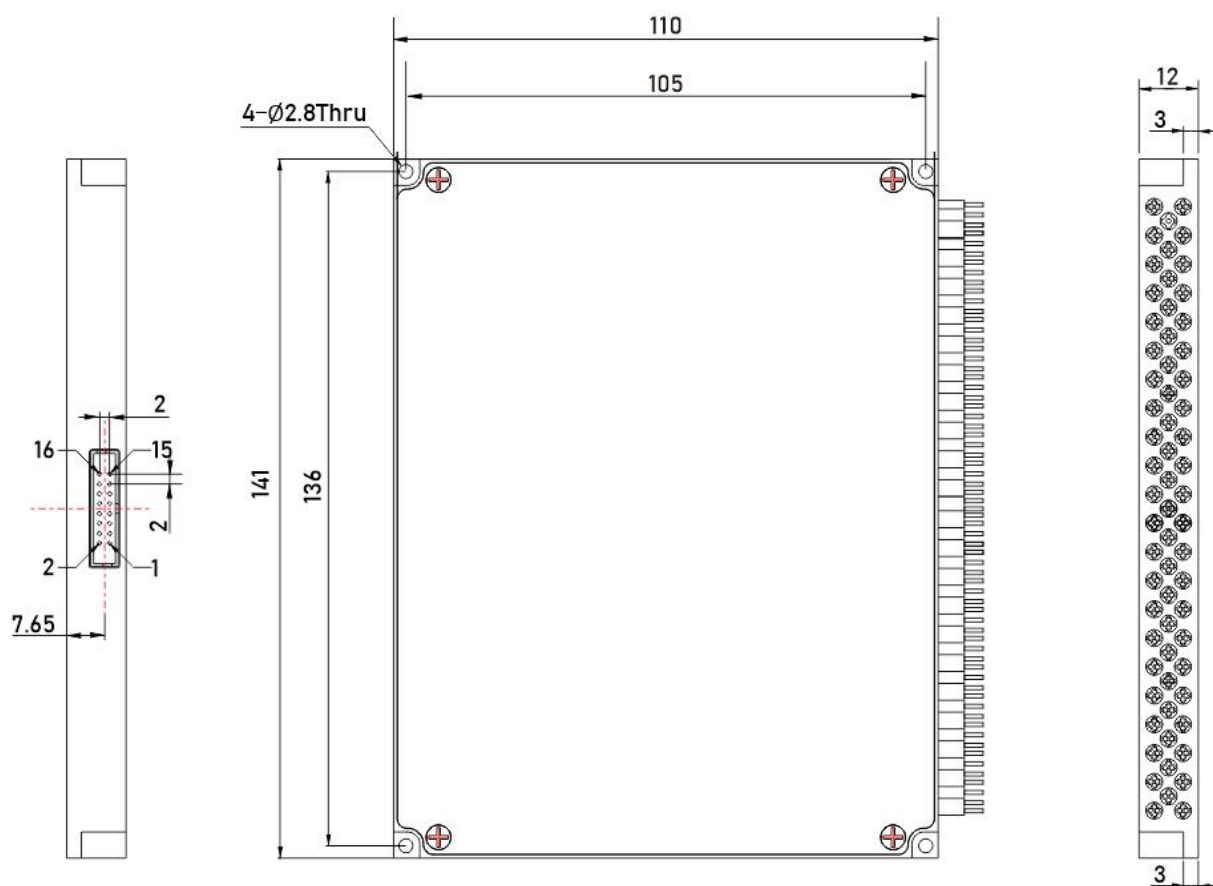


M3: 90×55×12mm



M4: 100×100×12mm

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M5: 110×141×12mm

Pin Configurations

Pin No.		Pin Assignment	Signal Type	Description
M1/M2	M3/M4/M5			
5	1	D0	Input	Data bit (D0) (low-order)
	2	D5	Input	Data bit (D5)
2	3	VCC	Power	Power Supply (DC 5V,1.0A)
	4	D7	Input	Data bit (D7) (high-order)
	5	D6	Input	Data bit (D6)
4	6	GND	Power	GND
	7	D4	Input	Data bit (D4)
6	8	D1	Input	Data bit (D1)
9	9	TXD	Output	Data Transmit (TTL Level)
10	10	RXD	Input	Data Receive (TTL Level)
7	11	D2	Input	Data bit (D2)
8	12	D3	Input	Data bit (D3)
12	13	/BUSY	Output	Low level means ready to reset or receiving data
	14	/ALARM	Output	High level means running error

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3	15	/STROBE	Input	Falling edge execution data bit
14	16	/RESET	Input	Low level reset to channel 0
11		GND	Power	GND
13		MODE		Low level: data bit control switch. High level: UART control switch
1		NC		No connection

Notes:

1. The electrical interfaces of M3, M4 and M5 modules is Molex 87833-1620. Molex 87568-1694 connector is recommended.
2. Only the serial port is available if the number of channels exceeds 16 when using M1 and M2.

Ordering information:

OSW (Optical Switch) PN: OSW-XXXXXX-XX (OSW+7 Code+2 Serial Number)										
OSW	XX		XX		X		X		X	
	Type		Wavelength		Fiber Jacket		Fiber Length		Connector	
	01	1X1	13	1310	0	250um Bare Fiber	0	0.5m	0	none
	02	1X2	15	1550	1	0.9mm Loose Tube	1	1.0m	1	SC/UPC
	03	1X3	35	1310/1550	S	Special	2	1.5m	2	SC/APC
	04	1X4	0S	Special			3	2.0m	3	FC/UPC
	05	1X5					4	2.5m	4	FC/APC
	06	1X6					5	3.0m	5	LC/UPC
	...	...					6	3.5m	6	LC/APC
	48	1X48					7	0.7m	7	ST/UPC
	0S	Special					8	1.2m	8	E2000
							9	2.7m	S	Special
							S	Special		

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