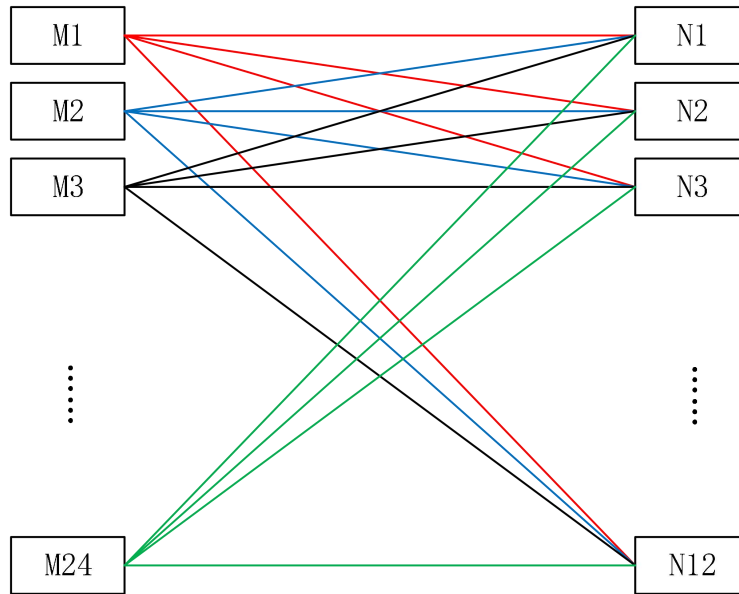


MEMS Optical Switch Module Specification

directory

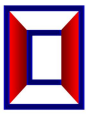
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1. Schematic diagram of the optical path

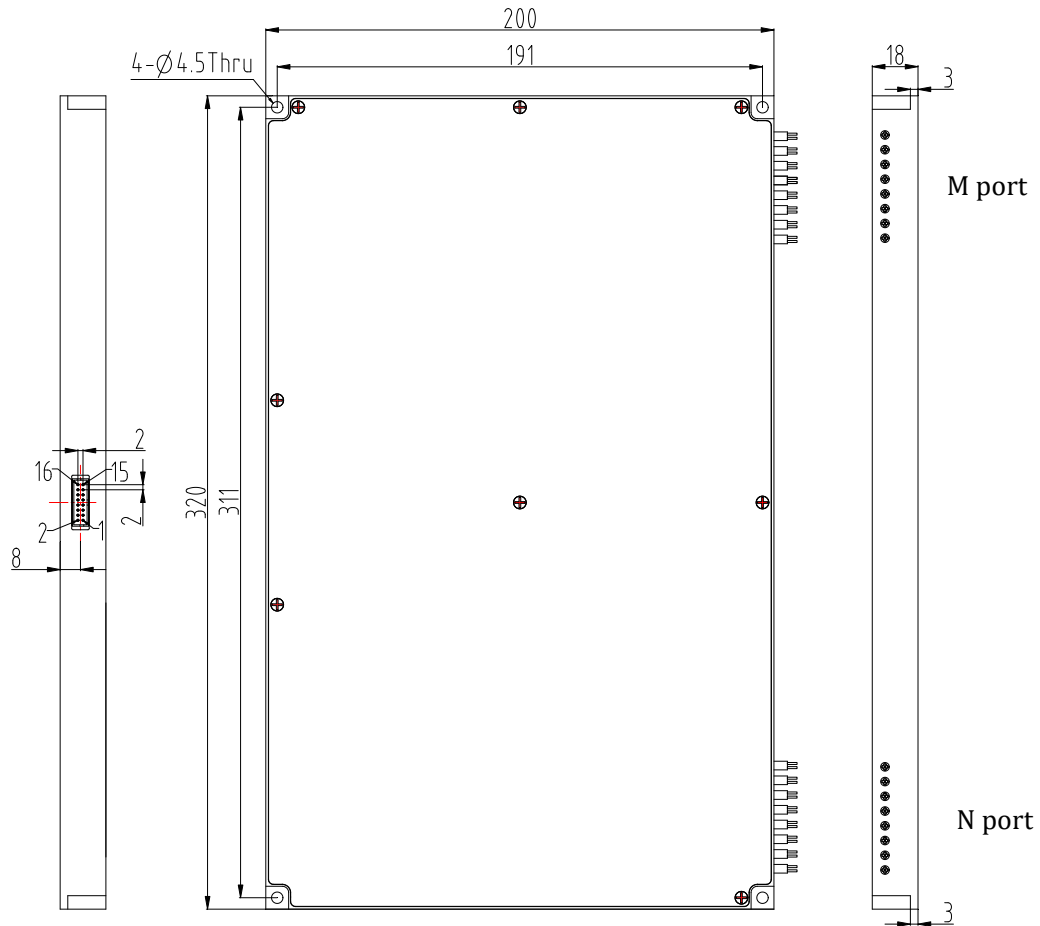


2. Performance indicators

Model number	HC-MEMS 24X12
Operating wavelength	1310/1550nm
Insertion loss	≤3.0dB
Return loss	≥45dB
crosstalk	≥50dB
Switch time	≤30ms
Transmit optical power	≤23dBm
Fiber type	SM-9/125
Optical type	LC/PC
Fiber length	0.6m
Control interface	UART
Operating voltage	DC5V
Module power consumption	≤10W
Operating temperature	-5℃ ~ +60℃
Storage temperature	-40℃ ~ +85℃
Module size	320X200X18mm



3. Size diagram



4. Pin definition

Pin number	Pin definition	Signal direction, type	Function description
1	NC		dangling
2	NC		dangling
3	VCC	Power	Power supply, DC 5V, 2A
4	VCC	Power	Power supply, DC 5V, 2A
5	GND	Power	GND
6	GND	Power	GND
7	NC		dangling
8	NC		dangling
9	TXD	Output	Serial port data transmitter (LVTTTL level serial port).
10	RXD	Input	Serial data receiving terminal

			(LVTTL level serial port).
11	NC		dangling
12	NC		dangling
13	NC		dangling
14	NC		dangling
15	NC		dangling
16	NC		dangling

Note: The module electrical interface uses MOMOLEX's 87833-1620 and the customer connector is recommended to use MOMOLEX's 87568-1694.

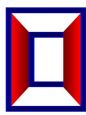
5. Description of programmatic instructions

This device can receive control signals from the computer through the UART interface to achieve automatic measurement or real-time monitoring.

- (1) This instrument can only execute one instruction at a time. Usually, the program returns the corresponding value before entering the next instruction.
- (2) Please use capital letters.
- (3) In actual operation, enter the sharp bracket "<" as the start character and the sharp bracket ">" as the ending.
- (4) Instruction error returns <ER>.

Program-controlled instruction set

command	description	example
<OSW_SW_a_b_c_d_e_f_g_h_i_j_k_l> (a、b、c、d、e、f、g、h、i、j、k、l values 01~24 , and the values cannot be the same!)	Channel switching Send: <OSW_SW_N1 corresponding M channel_N2 corresponding M channel_N3 corresponding M channel_N4 corresponding M channel_N5 corresponding M channel_N6 corresponding M channel_N7 corresponding M channel_N8 corresponding M channel_N9 corresponding M channel_N10 corresponding M channel_N11 corresponding M channel_N12 corresponding M channel>	Send: <OSW_SW_01_02_03_04_05_06_07_08_09_10_11_12> Return: <OSW_SW_01_02_03_04_05_06_07_08_09_10_11_12_OK> It means that the 24X12 optical path is set to: M1→N1、M2→N2、M3→N3、M4→N4、M5→N5、M6→N6、M7→N7、M8→N8、M9→N9、M10→N10、M11→N11、M12→N12;
<OSW_A_?>	Query the channel status Return: <OSW_A_N1 corresponding M channel_N2 corresponding M channel_N3 corresponding M channel_N4 corresponding M	Return: <OSW_A_01_02_03_04_05_06_07_08_09_10_11_12> The current optical path is: M1→N1、M2→N2、M3→N3、M4→N4、M5→N5、M6→N6、M7→N7、M8→N8、



	channel_N5 corresponding M channel_N6 corresponding M channel_N7 corresponding M channel_N8 corresponding M channel_N9 corresponding M channel_N10 corresponding M channel_N11 corresponding M channel_N12 corresponding M channel>	M9→N9、M10→N10、M11→N11、 M12→N12;
<OSW_BAUD_x>	Set or query the baud rate of the serial port 1.x is 1~9, indicating baud rates of 2400, 4800, 9600, 14400, respectively 19200、38400、56000、57600、115200 return: <OSW_BAUD_x_OK> 2. Send <OSW_BAUD_?> query the baud rate	Send: <OSW_BAUD_5> Set the device serial port baud rate to 19200 After the configuration is saved, the restart takes effect!
<INFO_?>	Query device information	return: <MEMS-24x12_VER1.00_SN01234567890_C10.02.00025> Indicates MEMS 24x12 module, version 1.00, SN number 01234567890, product number C10.02.00025;
<SAVE_ALL>	Save the configuration return:<OK>	Save the configuration, such as channel state.
<RESET>	Restart the module	return:<RESET_OK>
<RESTORE>	Factory reset	return:<RESET_OK>

6. Factory default configuration

project	Factory default configuration	remark
Power-on initial channel	M1→N1、M2→N2、M3→N3、 M4→N4、M5→N5、M6→N6、 M7→N7、M8→N8、M9→N9、 M10→N10、M11→N11、M12→N12	After the device is powered down and powered on, the light path state at the time of the configuration is saved
Serial port baud rate	115200	8 data bits, 1 stop bit, no parity.