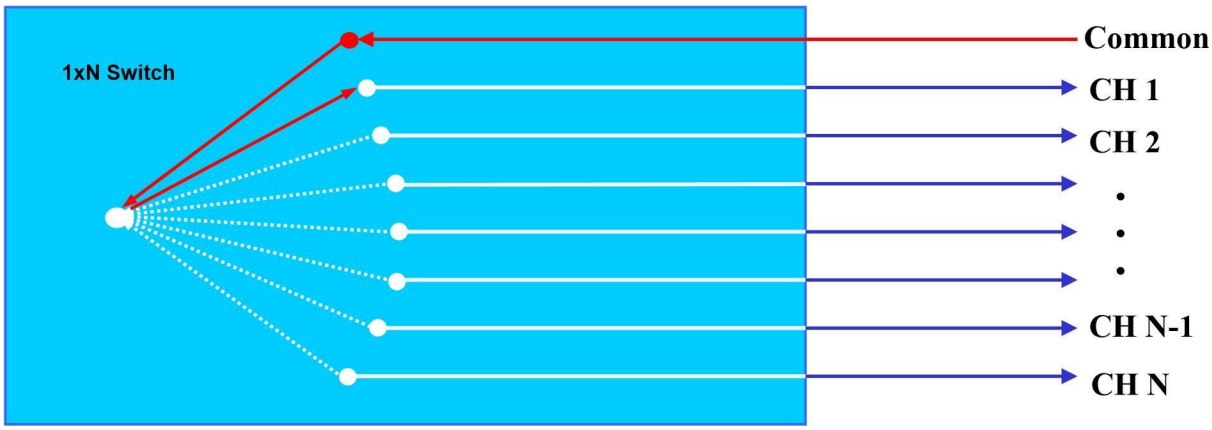
MEMS optical switch 1x256 module Specifications

Directory

1. The diagram inside the module

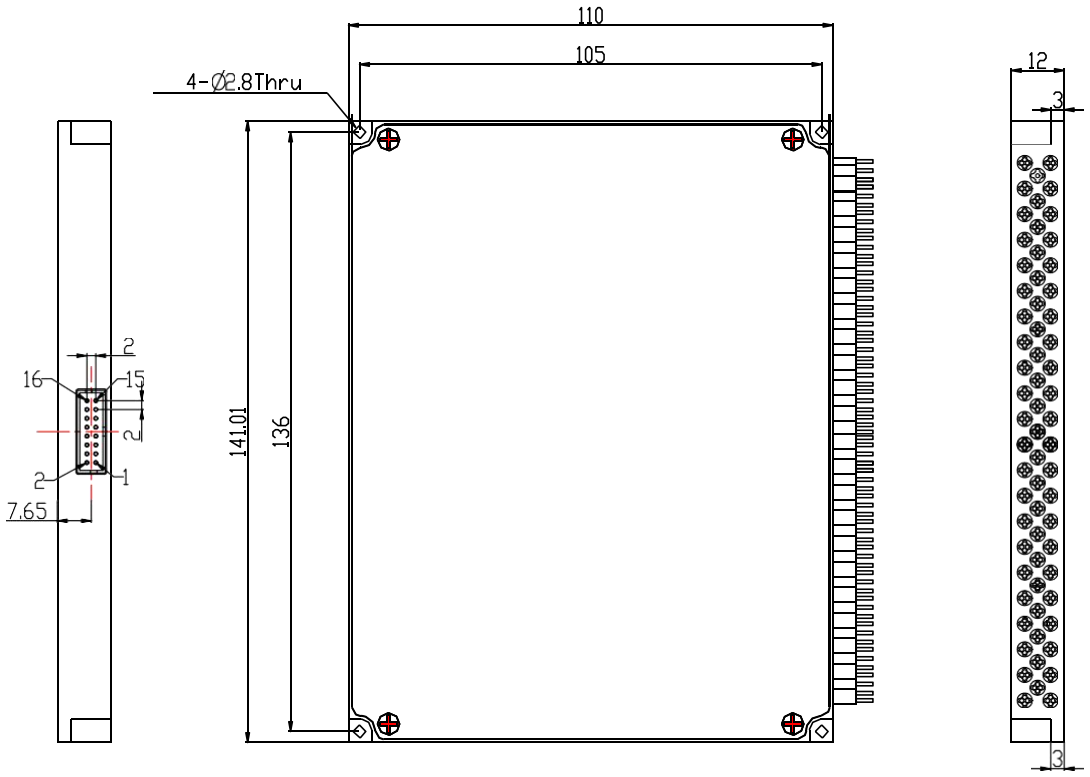


2. Performance indicators

TypeNo	MEMS-1X256-S-165-M5-9-90-05-MP
Fiber type	SM
Working wavelength	1260-1650nm
Insert loss [1]	≤2.8dB
PDL	≤0.15dB
Return Loss	≥45 dB
Channel crosstalk	≥50 dB
Repeatability	≤±0.05dB
Switching time	≤15ms
Durability	$\geq 10^9$
The connection head type	COM port LC / APC, other ports MPO / APC (24 core male)
out of the fiber length	0.5m
Enter optical power	≤500 mW
Power supply	DC5V±10%, 500mA
Operating temperature	-5 ~ 70 ℃
Store the temperature	-40 ~ 85 ℃
Module size	110(L) x 141(W) x 12(H) ±0.2mm

Note: 1. All parameters are tested at room temperature.

3. Module size illustration



4. Pin definition

Pin#	Signal name	Type	Description
1	D0	Input	Data bit D0（low）
2	D5	Input	Data bit D5
3	VCC	Power	Power supply，DC 5V，1.0A
4	D7	Input	Data bit D7（high）
5	D6	Input	Data bit D6
6	GND	Power	GND
7	D4	Input	Data bit D4
8	D1	Input	Data bit D1
9	TXD	Output	RS232 TX（TTL）
10	RXD	Input	RS232 RX（TTL）
11	D2	Input	Data bit D2
12	D3	Input	Data bit D3
13	/BUSY	Output	Normally pulled low. While a module is busy, it will be

			pulled high.
14	/ALARM	Output	Normally pulled low. While a module logged alarms, it will be pulled high.
15	/STROBE	Input	Falling edge active to synchronize command execution.
16	/RESET	Input	Low reset to channel 0, high data bit effective.

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

5. Program-controlled instruction

This module can receive control signals from the computer through the TTL RS232 interface for automatic measurement or real-time monitoring.

(1),The instrument can only execute one instruction at a time. Usually you can't enter the next instruction until the program returns the appropriate value.

(2),please use capital letters.

(3),in practice, enter the anglebrackets "slt;"as the starter, the sharpbrackets"and"asthe ending character."

(4),the instruction error returns the <ER>.

The program-controlled instruction set

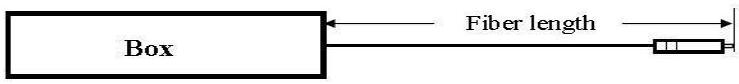
Command	Describe	Example
<RESET>	Restart the module	Successful return:<RESET_OK>
<RESTORE>	Return to factory settings	Successful return:<RESET_OK>
<INFO_?>	Query module information	Successful return: <MEMS-SM-1X256_VER1.00_ SN01234567890_C06.08.00101> Represents MEMS-SM-1X32 module, version 1.00,SN number 01234567890, product number C06.08.00101;
<BAUD_x>	Set or query the serial port rate 1.x:1~9,The baud rates are 2400, 4800, 9600, 14400, 19200, 38400, 56000, 57600 and 115200 respectively Successful return: <BAUD_x_OK> 2. Send <BAUD_?> Query Baud Rate	Send:<BAUD_5> Successful return:<BAUD_5_OK> Set the device serial port rate to 19200 The reboot takes effect after the configuration is saved!
<OSW_M_x>	Working mode selection x: The values are 0, 1,?; 0 represents data bit control switching, 1 represents UART control switching, and? Represents query working mode; Successful return:<OSW_M_x_OK>	Send:<OSW_M_1> Successful return:<OSW_M_1_OK> Indicates that the set module is UART control switch; Send:<OSW_M_?> Successful return:<OSW_M_1 > Indicates that the module is a UART control switch;

<OSW_01_SW_xxx>	Set current channel xxx:Value 000~256, 000 represents 0 channel and 256 represents 256 channel;	Send:<OSW_01_SW_002> Successful return:<OSW_01_SW_002_OK>
	Successful return:<OSW_01_SW_yy_OK> Note: In data bit control switching mode, Send:<OSW_01_SW_xxx> Successful return:<OSW_M_ER>	indicates a switch to 2 channels;
<OSW_A_?>	Query channel status Successful return:<OSW_A_Optical switch channel>	Successful return:<OSW_A_01> indicates that the light switch is 1 channel;
<SAVE_ALL>	Save configuration Successful return:<SAVE_ALL_OK>	Save the configuration, such as channel state.

6. The data bit switching logic table

/RESET	D7	D6	D5	D4	D3	D2	D1	D0	Channel
0	X	X	X	X	X	X	X	X	0
1	0	0	0	0	0	0	0	0	1
	0	0	0	0	0	0	0	1	2
	0	0	0	0	0	0	1	0	3
	0	0	0	0	0	0	1	1	4
	…	…	…	…	…	…	…	…	…
	1	1	1	1	1	1	1	1	256

7. Fiber length definition



Contains Boot and connection head length

8. Factory default configuration

Project	Factory default configuration	Note
Serial port rate	115200	8 bit data bit,1 bit stop bit, no parity.
Working mode	The data bit controls the switch	
Working channel	When the data bit control switches, the working channel is determined by the data bit. When UART control is switched ， Theworking channel is channel 1；	When UART control is switched， The light path state at the time of configuration saving is maintained after the module is powered off and then powered on