

# MICROSENSOR

**Pressure Transmitter  
MPM4700 & MPM4730  
-  
MODBUS  
Communication Protocol**

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## Table of Content

<b>1</b>	<b>Table of Register Address.....</b>	<b>2</b>
1.1	Read- and Writable Byte Parameter .....	2
1.2	Read- and Writable Short Parameter .....	3
1.3	Read- and Writable Float Parameter .....	3
1.4	Read- and Writable String Parameter.....	4
1.5	Read-only Float Parameter .....	4
<b>2</b>	<b>Function Codes Supported .....</b>	<b>4</b>
2.1	Description.....	4
<b>3</b>	<b>MODBUS Protocol Format .....</b>	<b>5</b>
3.1	Reading register and responses.....	5
3.2	Writing single register and responses .....	5
3.3	Writing multiple register and responses .....	5
3.4	Exception response.....	6
<b>4</b>	<b>Save user data and Restore factory settings .....</b>	<b>6</b>
4.1	Save.....	6
4.2	Restore.....	6

## 1 Table of Register Address

### 1.1 Read- and Writable Byte Parameter

Modbus Address /Actual Address	Parameter description	Register amount /Bytes	Default value
40001/0 0x00	MIMA(reserved)	1/1	
40002/1 0x01	ADDR (device address)	1/1	0x01
40003/2 0x02	BAUD: 1200/2400/4800/9600 /19200 corresponds 0/1/2/3/4	1/1	0x03(9600) - default

# MICROSENSOR

40004/3 0x03	UNIT (physical unit)	1/1	0x00(kPa) 0x01(MPa) - default 0x02(mH2O) 0x03(Bar) 0x04(Psi) 0x05(mBar) 0x06 0x07(mmHg) 0x08(atm) 0x09(Pa)
40008/7 0x07	PNUM	1/1	0x00
40009/8 0x08	CALM(reserved)	1/1	0x00

## 1.2 Read- and Writable Short Parameter

Modbus Address /Actual Address	Parameter description	Register amount /Bytes	Default value
40011/10 0x0A	DAL	1/2	0x0000
40012/11 0x0B	DAH	1/2	0x0000

## 1.3 Read- and Writable Float Parameter

Configuration parameter of transmitter:

Modbus Address /Actual Address	Parameter description	Register amount /Bytes	Default value
40013/12 0x0C	SL	2/4	0.0
40015/14 0x0E	SH	2/4	1.0
40017/16 0x10	DPL	2/4	0.0
40019/18 0x12	DPH	2/4	1.0
40021/20 0x14	IOL	2/4	0.0
40023/22 0x16	IOH	2/4	1.0
40025/24 0x18	SZ Zero pressure value	2/4	0.0
40027/26 0x1A	STATUS	1/1	0x00 4mA, 20mA Calibration switching state variables

# MICROSENSOR

Attention: 4-byte Float, single-precision floating-point format in accordance with IEEE-754 standard

Byte no.	1	2	3	4
Byte data	0xF5	0xC3	0x40	0x48

Decoding result: hexadecimal 0x4048F5C3, that is floating point number 3.14

For example, the floating point number 10.28, the single-precision floating point number is expressed as 0x41247AE1, and the storage format in the register is:

Byte no.	1	2	3	4
Byte data	0x7A	0xE1	0x41	0x24

## 1.4 Read- and Writable String Parameter

Transmitter's ID and TYPE

Modbus Address /Actual Address	Parameter description	Register amount /Bytes	Default value
40029/28 0x1C	ID	4/8	00000000
40033/32 0x20	TY	4/8	00000000

## 1.5 Read-only Float Parameter

Modbus Address /Actual Address	Parameter description	Register amount /Bytes	Default value
40037/36 0x24	RP (current pressure value)	2/4	
40039/38 0x26	TMP (current temperature value)	2/4	

The format of pressure and temperature value is consistent with the above Float data

## 2 Function Codes Supported

### 2.1 Description

Function code	Function description	Access Introduction
0x03	Reading register	byte、short、integer、float
0x06	Setting single register	byte、short
0x10	Setting multiple register	byte、short、integer、float

## 3 MODBUS Protocol Format

### 3.1 Reading register and responses

0x03 Reading register format:

Byte no.	Description
1	From device address
2	Read function code: 0x03
3,4	16-bit register address
5,6	Number of registers accessed, 16 bit
7,8	CRC

0x03 Reading register response format:

Byte no.	Description
1	From device address
2	Read function code: 0x03
3	Number of data bytes returned
4..(4+n)-1	Number of registers accessed, 16 bit
(4+n), (4+n)+1	CRC

### 3.2 Writing single register and responses

0x06 Writing single register format:

Byte no.	Description
1	From device address
2	Read function code: 0x06
3,4	Register address, 16bit
5,6	Value of writing in register, 16bit
7,8	CRC

0x06 Writing single register response format:

Byte no.	Description
1	From device address
2	Write function code: 0x06
3,4	Write register address, 16 bit
5,6	Value of writing in register, 16bit
(4+n), (4+n)+1	CRC

### 3.3 Writing multiple register and responses

0x10 Writing multiple registers format:

Byte no.	Description
1	From device address
2	Read function code: 0x10
3,4	Starting register address, 16bit

# MICROSENSOR

5,6	Number of writing register, 16bit
7	Bit number of writing
8..(8+n)-1	Value of Writing in register
(8+n), (8+n)+1	CRC

0x10 Writing multiple registers response format:

Byte no.	Description
1	From device address
2	Writing function code: 0x10
3,4	Starting writing register address
5,6	Number of writing register, 16bit
7,8	CRC

## 3.4 Exception response

Exception response format

Byte no.	Description
1	From device address
2	Function code: 0x80
3	Exception code
4,5	CRC Varification

Exception code

Code	Name	Description
03	Value exception	Data length invalid
04	CRC Varification failed	CRC Varification failed

## 4 Save user data and Restore factory settings

### 4.1 Save

Address	0x10	0x01	0x88	0x00	0x02	0x04	CRC1	CRC2
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### 4.2 Restore

Address	0x10	0x04	0x88	0x00	0x02	0x04	CRC1	CRC2
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