WNK805|8010-T RS485 Pressure/Level Transmitter

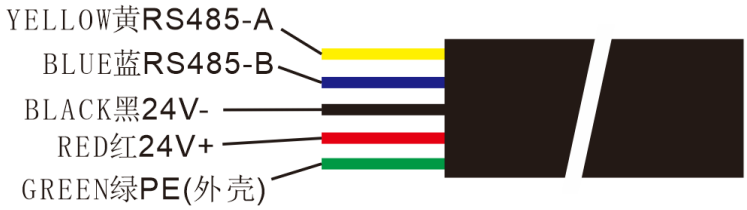
Manual

1， Technical Parameters

Range: -0.1~60MPa
Accuracy level: ±0.5%FS, ±1.0%FS
Protection level: IP65, IP68
Operating temperature: -30~80°C
Storage temperature: -40~80°C
Power supply: 7.5~36V DC
Current consumption: ≤15mA
Communication interface: RS485
Communication protocol: MODBUS-RTU
Baud rate: 9600
Data bits: 8
Stop position: 1
Parity: None

2， Wiring instructions

1, direct lead



2， DIN43650 （Hirschman）

① 24V+ ②RS485-A ③24V- ④RS485-B

3 Communication command

MODBUS RTU protocol communication command (address 02)

3.1.1 Read [pressure value] single precision floating point number (floating point format: ABCD)

- Host command: 02 03 00 00 00 02 C4 38

Sequence	**Definition**	**Bytes**	**Value**
0	Slave address	1 byte	02
1	function code	1 byte	03

2～3	Starting channel	2 bytes	00 00
4～5	Number of channels	2 bytes	00 02
6～7	Check code	2 Byte	C4 38

- **Slave response：02 03 04 41 45 70 A4 E8 A1**

Sequence	**Definition**	**Bytes**	**Value**
0	Slave address	1Byte	02
1	function code	1Byte	03
2	Number of data bytes	1Byte	04
3～6	pressure value	4Byte	41 45 70 A4(12.34)
7～8	Check code	2Byte	E8 A1

3.1.2 Read [pressure value] + [temperature value] single precision floating point number (floating point format: ABCD)

- **Host command：02 03 00 00 00 04 44 3A**

Sequence	**Definition**	**Bytes**	**Value**
0	Slave address	1Byte	02
1	function code	1Byte	03
2～3	Starting channel	2Byte	00 00
4～5	Number of channels	2Byte	00 04
6～7	Check code	2Byte	44 3A

- **Slave response：02 03 08 41 45 70 A4 41 CD 5C 29 4C 5F**

Sequence	**Definition**	**Bytes**	**Value**
0	Slave address	1Byte	02
1	function code	1Byte	03
2	Number of data bytes	1Byte	08
3～6	pressure value	4Byte	41 45 70 A4(12.34)
7～10	Temperature value(℃)	4Byte	41 CD 5C 29(25.67)
11～12	Check code	2Byte	4C 5F

3.1.3 Read [pressure value] single precision floating point number (floating point format: DCBA)

Host command： 02 03 00 01 00 02 95 F8

Sequence	**Definition**	**Bytes**	**Value**
0	Slave address	1Byte	02

1	function code	1Byte	03
2～3	Starting channel	2Byte	00 01
4～5	Number of channels	2Byte	00 02
6～7	Check code	2Byte	95 F8

- **Slave response：02 03 04 A4 70 45 41 19 78**

Sequence	**Definition**	**Bytes**	**Value**
0	Slave address	1Byte	02
1	function code	1Byte	03
2	Number of data bytes	1Byte	04
3～6	pressure value	4Byte	A4 70 45 41(12.34)
7～8	Check code	2Byte	19 78

3.1.4 Read [pressure value] + [Temperature value] single precision floating point number (floating point format: DCBA)

Host command：02 03 00 01 00 04 15 FA

Sequence	**Definition**	**Bytes**	**Value**
0	Slave address	1Byte	02
1	function code	1Byte	03
2～3	Starting channel	2Byte	00 01
4～5	Number of channels	2Byte	00 04
6～7	Check code	2Byte	15 FA

- **Slave response：02 03 08 A4 70 45 41 29 5C CD 41 8E AB**

Sequence	**Definition**	**Bytes**	**Value**
0	Slave address	1Byte	02
1	function code	1Byte	03
2	Number of data bytes	1Byte	08
3～6	pressure value	4Byte	A4 70 45 41(12.34)
7～10	Temperature value(℃)	4Byte	29 5C CD 41(25.67)
11～12	Check code	2Byte	8E AB

3.2.1 Read [pressure value] double Byte signed integer (high Byte first)

Host command：04 00 00 00 02 71 F8

Sequence	**Definition**	**Bytes**	**Value**
0	Slave address	1Byte	02

1	function code	1Byte	04
2～3	Starting channel	2Byte	00 00
4～5	Number of channels	2Byte	00 02
6～7	Check code	2Byte	71 F8

- **Slave response：02 04 04 00 1B 27 10 A2 BF**

Sequence	**Definition**	**Bytes**	**Value**
0	Slave address	1Byte	02
1	function code	1Byte	04
2	Number of data bytes	1Byte	04
3～4	Integer pressure value	2Byte	00 1B(27)
5～6	Pressure coefficient	2Byte	27 10(10000)
7～8	Check code	2Byte	A2 BF

Actual pressure value=integer pressure value ÷ Pressure coefficient= 27÷10000=0.0027

3.2.2 Read [pressure value] double Byte signed integer (low Byte first)

- **Host command：**02 04 00 01 00 02 20 38

Sequence	**Definition**	**Bytes**	**Value**
0	Slave address	1Byte	02
1	function code	1Byte	04
2～3	Starting channel	2Byte	00 01
4～5	Number of channels	2Byte	00 02
6～7	Check code	2Byte	20 38

- **Slave response：02 04 04 18 00 10 27 83 FE**

Sequence	**Definition**	**Bytes**	**Value**
0	Slave address	1Byte	02
1	function code	1Byte	04
2	Number of data bytes	1Byte	04
3～4	Integer	2Byte	18 00(24)

	pressure value		
5～6	Pressure coefficient	2Byte	10 27(10000)
7～8	Check code	2Byte	83 FE

Actual pressure value=Integer pressure value ÷ Pressure coefficient = 24÷10000=0.0024

3.2.3 Read [pressure value] + [Temperature value] double Byte signed integer (high Byte first)

- **Host command：**02 04 00 00 00 04 F1 FA

Sequence	Definition	Bytes	Value
0	Slave address	1Byte	02
1	function code	1Byte	04
2～3	Starting channel	2Byte	00 00
4～5	Number of channels	2Byte	00 04
6～7	Check code	2Byte	F1 FA

- **Slave response：02 04 08 00 1B 27 10 41 FB 03 E8 22 2F**

Sequence	Definition	Bytes	Value
0	Slave address	1Byte	02
1	function code	1Byte	04
2	Number of data bytes	1Byte	08
3～4	Integer pressure value	2Byte	00 1B(27)
5～6	Pressure coefficient	2Byte	27 10(10000)
7～8	Integer Temperature value	2Byte	41 FB(16891)
9～10	Temperature Coefficient	2Byte	03 E8(1000)
11～12	Check code	2Byte	83 FE

Actual pressure value=Integer pressure value÷Pressure

coefficient = 27÷10000=0.0027;

Actual Temperature value=Integer Temperature value÷Temperature Coefficient=16891÷1000=16.891℃。

3.2.4 Read [pressure value] + [Temperature value] double Byte signed integer (low Byte first)

- **Host command：**02 04 00 01 00 04 A0 3A

Sequence	Definition	Bytes	Value
0	Slave address	1Byte	02
1	function code	1Byte	04
2～3	Starting channel	2Byte	00 01
4～5	Number of channels	2Byte	00 04
6～7	Check code	2Byte	A0 3A

- **Slave response：02 04 08 1B 00 10 27 A8 46 E8 03 92 D5**

Sequence	Definition	Bytes	Value
0	Slave address	1Byte	02
1	function code	1Byte	04
2	Number of data bytes	1Byte	08
3～4	Integer pressure value	2Byte	1B 00(27)
5～6	Pressure coefficient	2Byte	10 27(10000)
7～8	Integer Temperature value	2Byte	A8 46(18088)
9～10	Temperature Coefficient	2Byte	E8 03(1000)
11～12	Check code	2Byte	92 D5

Actual pressure value=Integer pressure value÷Pressure coefficient = 27÷10000=0.0027;

Actual Temperature value=Integer Temperature value÷Temperature Coefficient=18088÷1000=18.088℃。

3.3.1 Read [pressure value] double Byte unsigned number [0-50000] proportional output

- **Host command**：02 04 00 02 00 02 D0 38

Sequence	Definition	Bytes	Value
0	Slave address	1Byte	02
1	function code	1Byte	04
2～3	Starting channel	2Byte	00 02
4～5	Number of channels	2Byte	00 02
6～7	Check code	2Byte	D0 38

- **Slave response：02 04 04 00 3D 3D 00 49 D8**

Sequence	Definition	Bytes	Value
0	Slave address	1Byte	02
1	function code	1Byte	04
2	Number of data bytes	1Byte	04
3～4	Pressure ratio value [the high first]	2Byte	00 3D(61)
5～6	Pressure ratio value [the low first]	2Byte	3D 00
7～8	Check code	2Byte	49 D8

Actual pressure value= Range lower limit + (pressure ratio value ÷50000) X (range upper limit - range lower limit);

3.3.2 Read [pressure value] + [Temperature value] double Byte unsigned number [0-50000] ratio output

- **Host command**：02 04 00 02 00 04 50 3A

Sequence	Definition	Bytes	Value
0	Slave address	1Byte	02
1	function code	1Byte	04
2～3	Starting channel	2Byte	00 02
4～5	Number of	2Byte	00 04

	channels		
6～7	Check code	2Byte	50 3A

- **Slave response：02 04 08 00 68 68 00 42 E7 E7 42 A5 E9**

Sequence	Definition	Bytes	Value
0	Slave address	1Byte	02
1	function code	1Byte	04
2	Number of data bytes	1Byte	08
3～4	Pressure ratio value [the high first]	2Byte	00 68(104)
5～6	Pressure ratio value [the low first]	2Byte	68 00
7～8	temperature ratio value [the high first]	2Byte	42 E7(17127)
9～10	temperature ratio value [the low first]	2Byte	E7 42
11～12	Check code	2Byte	A5 E9

Actual pressure value= Range lower limit + (pressure ratio value ÷50000) X (range upper limit - range lower limit);

Actual Temperature value= (temperature ratio value ÷50000) X (200) - 50;

3.4 Set the bus address [range 1~247] (original address: 02 new address 03)

- **Host command：02 06 00 01 00 03 98 38**

Sequence	Definition	Bytes	Value
0	Slave address	1Byte	02
1	function code	1Byte	06
2～3	Channel	2Byte	00 01
4～5	New Address	2Byte	00 03
6～7	Check code	2Byte	98 38

- Successful response from the slave**: 02 06 00 01 00 03 98 38**

Sequence	Definition	Bytes	Value
0	Slave address	1Byte	02
1	function code	1Byte	06
2	Channel	2Byte	00 01
3～4	New Address	2Byte	00 03
5～6	Check code	2Byte	98 38

3.5 Set pressure unit

- **Host command：02 06 00 02 00 05 E8 3A**

Sequence	Definition	Bytes	Value
0	Slave address	1Byte	02
1	function code	1Byte	06
2～3	Channel	2Byte	00 02
4～5	New pressure unit	2Byte	00 05(MPa)
6～7	Check code	2Byte	E8 3A

- **Successful response from the slave: 02 06 00 02 00 05 E8 3A**

Sequence	Definition	Bytes	Value
0	Slave address	1Byte	02
1	function code	1Byte	06
2	Channel	2Byte	00 02
3～4	New pressure unit	2Byte	00 05
5～6	Check code	2Byte	E8 3A

Note: Pressure unit code

Unit	Code of Unit
psi	**0**
bar	**1**
mbar	**2**
Pa	**3**
kPa	**4**
MPa	**5**
mm	**6**

cm	**7**
m	**8**

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