LEFOO

LFM57

ATMOSPHERIC PRESSURE TRANSMITTER

PRODUCT OPERATION MANUAL

PRODUCT OVERVIEW

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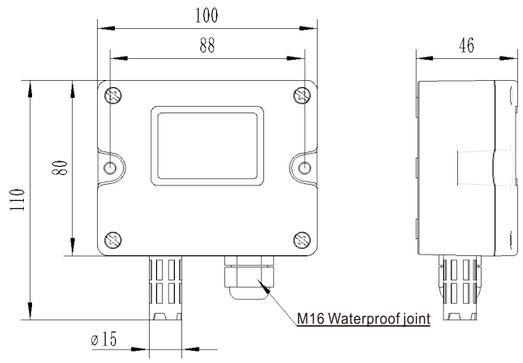
LFM57 series atmospheric pressure transmitters are suitable for atmospheric pressure monitoring in various environments.Product installation space is small.Customers can adjust the products according to the site conditions.The product adopts imported low power consumption, low noise digital atmospheric pressure core, with sensitive pressure response, long-term output stability, superior performance and other characteristics.The product adopts IP65 protection grade housing, suitable for small weather stations, altimeters, archives and other places requiring atmospheric pressure monitoring.

OVERALL DIMENSION

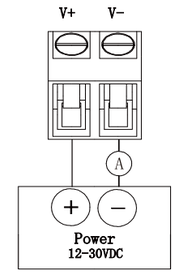


TECHNICAL PARAMETER

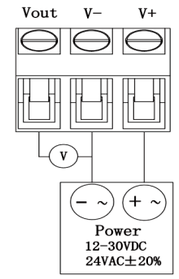
Measuring medium	Air (non-condensing)		
Pressure range	15kPa～130kPa		
Pressure type	Absolute pressure		
Display	Optional backlit LCD display, display area 45×30 mm		
Resolution	0.01kPa		
Allowable overvoltage	200kPa		
Accuracy	±0.25%F.S		
Operating temperature	-20℃～70℃		
Compensating temperature	-10℃～60℃		
Storage temperature	-40℃～70℃		
Protection class	IP65		
Electrical connection	Two-wire system	Three-wire system	Four-wire system
Output signal	4~20mA	0~10VDC	RS485
Power supply①	12-30VDC	12-30VDC/24VAC±20%	
Communication	RS485 Standard interface，Modbus RTU agreement		
Shell	Flame retardant PC shell (flame retardant grade UL94-V0), ABS probe housing and polymer filter layer		
Output load	≤250(current output); ≥5KΩ(voltage output)		

①When the product uses AC power supply, use isolated AC power supply.

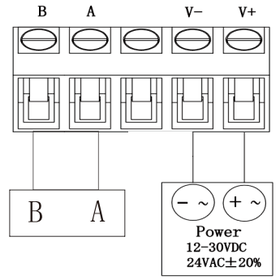
CONNECTION MODE



Current type output version wiring diagram (non-polar)



Voltage type output version wiring diagram

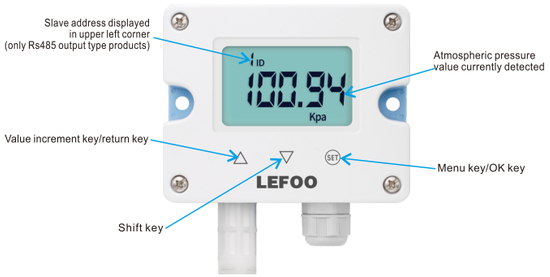


RS485 type output version wiring diagram

* When the RS485 type uses AC power supply , it is necessary to use isolated AC power supply , otherwise it may damage related connected devices.

FUNCTION INTRODUCTION

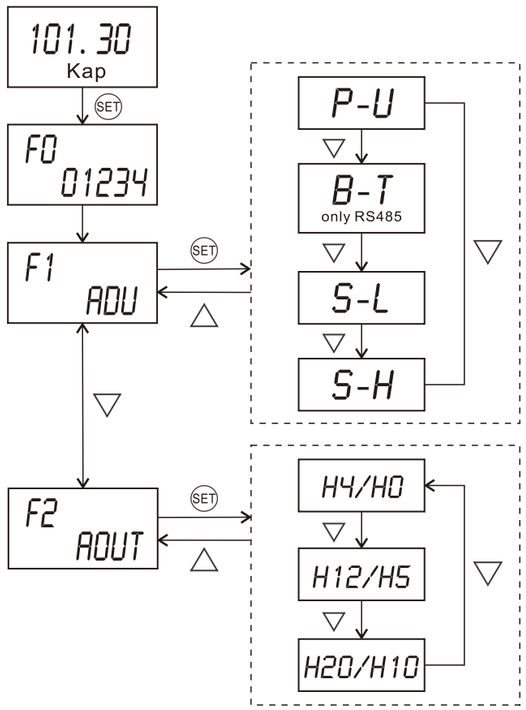
1.DISPLAY INTERFACE



2.KEY DESCRIPTION

key	Function description	Instructions for use
SET	Menu key Confirm key	1.Press the SET key to enter parameter Settings. 2. On the parameter setting screen, press the SET key once to select the current parameter setting, and then modify the parameter. The modified parameter will blink on the screen, and press the SET key again to save the current parameter.
△	Increment key Return key	1. Press this key, the current parameter to be modified +1, add to 9, press this key again, the current parameter becomes 0, and so on. 2. Press the key to return to the previous screen. 3. Press and hold the key to return to the display interface.
▽	Toggle key Shift key	1.Press the key to select the parameter screen . 2. Press the key to move the blinking position to the next digit.

3.OPERATING BLOCK DIAGRAM



4.KEY OPERATION INSTRUCTION

4.1 Password input interface(F0)

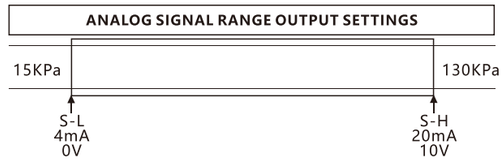
SET 1. Press the SET key once to enter the password output screen. Then press the SET key again → △▽ 2. Press the Add key. The screen is displayed as 01234 → SET 3. Press SET key once to confirm the current input value, and the screen will automatically jump into the next parameter setting interface (F1)

4.2 Function regulation(F1)

①Unit modification(P-U)
Modifiable unit KPa, mBar ; Default unit Kpa.
For example, 101.30KPa is displayed
②Baud rate modification(B-t)(Only RS485 version is available)
Modifiable baud rate 4800,9600,19200 ; Default baud rate is 9600.
Which is used to set the baud rate for RS485 output communication
③Lower range limit modified (S-L)
The minimum range can be modified to 15.00KPa; The default is 15.00KPa.
This value corresponds to the low value part of the output analog signal, corresponding to 4mA/0V respectively.
④Range upper limit modified (S-H)
The maximum range can be modified to 130.00KPa;The default is 130.00KPa.

This value corresponds to the high value part of the output analog signal, corresponding to 20mA/10V respectively.

▶Analog signal range output setting instructions:Lower limit (S-L) and upper limit (S-H) can be set in the range setting interface, corresponding to the output of analog signals 4~20mA and 0~10V, as shown in the figure below:



4.3 Output regulation(F2)

①Current output version：
H4 submenu interface: Error adjustment of 4mA current signal can be performed
H12 submenu interface: Error adjustment of 12mA current signal can be performed
H20 submenu interface: Error adjustment of 20mA current signal can be performed
(multimeter needs to be connected).
②Voltage output version：
H0 submenu interface: Error adjustment of 0V voltaget signal can be performed,
H5 submenu interface: Error adjustment of 5V voltaget signal can be performed,
H10 submenu interface: Error adjustment of10V voltaget signal can be performed,

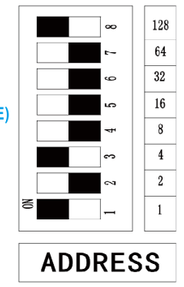
Note:
1.the above error adjustment needs to be connected to the standard instrument for operation,
2.The OV voltage signal is adjusted in the direction of voltage output from high to low, and finally at the critical value at which the voltage output stops changing (the OV signal cannot be adjusted to 0V in a real sense, and there is still a certain value
3.all the operation steps do not operate for a period of time will return to the display interface by default.

4.4 Information Description

ERR4 The password is incorrect
ERR5 The sensor data is incorrectly read.
SUCC successfully set

5.ADDRESS SETTING (ONLY FOR RS485 TYPE)

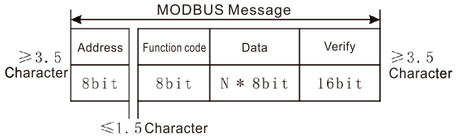
Dial to the ON side, then add the corresponding digital value on the right side accordingly,
ADDRESS in the address column is as follows: 1+4+128=133(0x85H);



The protocol runs on the RS485 hardware platform, which can realize remote one-to-many control and signal acquisition through 485 bus. This communication protocol is implemented in accordance with the ModBus RTU standard protocol.

1.CHARACTER FORMAT

Data：8Bit Parity：None Stop：1Bit
Baud Rate：4800 bps, 9600 bps, 19200 bps
In RTU mode, the interval between two characters must be less than 1.5 characters; otherwise, the packet frame is considered incomplete and the receiving station discards the packet frame. The interval between two packet frames must be at least 3.5 characters.



2.COMMUNICATION PROTOCOL

2.1 ID address of the slave machine

Slave IP address Indicates the ID number of each slave IP address. The default value of the local IP address is 0x01. You can change the product ID address only by using the DIP switch of the ID address.

2.2 Read register data (function code 0x03)

Slave IP address Indicates the ID number of each slave IP address. The default value of the local IP address is 0x01. You can change the product ID address only by using the DIP switch of the ID address.

The host sends the read instruction	ID address of the slave machine(8Bit)	Function code0x03	Register address(16Bit)	Number of reads(16Bit)	CRC low position(8Bit)	High CRC(8Bit)
	01	03	00 00	00 01	0C	0A
Slave machine Normal response	ID address of the slave machine	Function code	Data bytes(8Bit)	Register data	CRC low position	High CRC
	01	03	02	27 92	22	19
Slave machine Error response	ID address of the slave machine	Error code	Exception code: 0x02 or 0x03		CRC low position	High CRC
	01	0x83	02		C0	F1

2.3 Write to a single register (function code 0x06)

The host can write the data of the slave register through this function, and can only operate a single register. Sequence format:

The host sends the read instruction	ID address of the slave machine (8Bitx)	Function code 0x06	Register address (16Bit)	Write value (16Bit)	CRC low position (8Bit)	High CRC (8Bit)
	01	06	00 07	25 80	23	3B
Slave machine Normal response	ID address of the slave machine	Function code	Register address	Register data	CRC low position	High CRC
	01	06	00 07	25 80	23	3B
Slave machine Error response	ID address of the slave machine	Error code	Exception code: 0x02 or 0x03		CRC low position	High CRC
	01	0x86	02		C3	A1

3.REGISTER ADDRESS REFERENCE TABLE

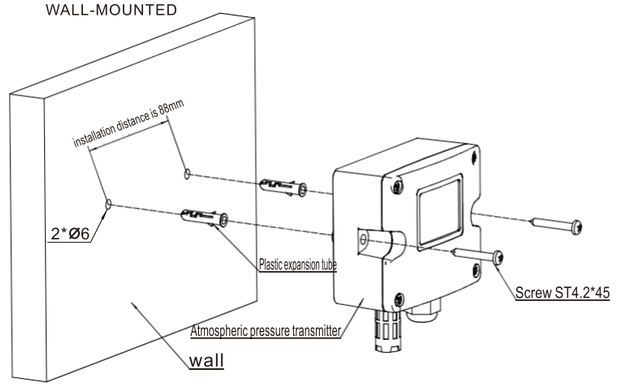
Register address	Register definition	Data type	Read-write mode	Specific function description
0x0000	Atmospheric pressure value(0.01Kpa)	Unsigned 16Bit integer	Read only	Example: When reading a value of 10103, convert to 101.03Kpa
0x0001	Atmospheric pressure value(0.1mBar)	Unsigned 16Bit integer	Read only	Example: When the read result is 10103, it is converted to 1010.3mBar
0x0002-0x0003	Atmospheric pressure value(Kpa)	Float/32Bit Value MSB->LSB:ABCD	Read only	
0x0004-0x0005	Atmospheric pressure value(mBar)	Float/32Bit Value MSB->LSB:ABCD	Read only	
0x0006	Reserve	Unsigned 16Bit integer	Readability	Reading the register returns 0
0x0007	Baud rate	Unsigned 16Bit integer	Read-write	4800, 9600, 19200

4.EXCEPTION CODE PARSING

Exception code	Cause of error	Solution
0x02	Read register start address error	Check whether the start address of the read register is readable against the register address reference table
0x03	Incorrect value written to register	Check whether the value written to the register is in the list against the register address reference table

5.INSTALLATION MODE

WALL-MOUNTED



1.Firstly, drill a Φ6mm hole 40mm deep at two places from 88mm on the wall;
2. Insert the whole product into the wall through the slot;
3. Finally, paste it on the wall through the stainless steel panel.

1.Transmitter has no display or output signal
Cause analysis：The transmitter is not powered or connected incorrectly.
solution：Connect the cables correctly according to the instructions.

2.The transmitter display or output does not match the measured pressure
Cause analysis：The power supply voltage is incorrect and the external load is too large.
solution：Power supply according to the voltage specified by the technical parameters and adjust the external load.

3.The product cannot communicate properly (for RS485 products)
Cause analysis and solution：
1)The computer has multiple COM ports. Please select the correct one.
2)The device address is incorrect or has the same address (the factory default is 1 for all devices).
3)Baud rate, check mode, data bit, stop bit error.
4)The polling interval and wait time for the host to answer are too short. Therefore, the interval must be set to more than 200ms.
5)The 485 bus is disconnected, or A, B line is reversed.
6)If there are too many devices or the wiring is too long, power the device nearby. For long-distance communication, install a jumper cap (120Ω terminal resistance) on the CN2 port.
7)The USB to 485 driver is not installed or the serial port device is damaged.

Note: If the fault phenomenon does not belong to the above situation, please contact after-sales technical support in time.